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BUREAU OF LABOR STATISTICS

BULLETIN OF THE UNITED STATES BUREAU OF LABOR STATISTICS | No. 263

MISCELLANEOUS SERIES

HOUSING BY EMPLOYERS IN THE UNITED STATES

LEIFUR MAGNUSSON

OCTOBER, 1920

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920



U. S. DEPARTMENT OF LABOR
W. B. WILSON, Secretary
BUREAU OF LABOR STATISTICS
ETHELBERT STEWART, Commissioner

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U. S. BUREAU OF LABOR STATISTICS.

NO. 263. WASHINGTON. OCTOBER, 1920.

HOUSING BY EMPLOYERS IN THE UNITED STATES.

CHAPTER I.—INTRODUCTION AND SUMMARY.[2]

INTRODUCTION.

"Employers' housing" is the term used to describe housing work done by employers in the interest of their employees. It is synonymous with the term "company housing." The housing work must be incidental to the main business of the employer. The employer's interest in the housing work must be that of an employer, and not primarily that of a real estate operator or builder. The employer may carry on the housing work as an integral part of his main business, or through a subsidiary company or other secondary means; he may provide the capital for building or merely furnish the land. The fact that an employer houses only a small fraction of his employees or only a certain limited class is not a test as to whether or not any particular scheme is an employers' housing scheme; neither is the amount of profits from the scheme a test. Further, the mere name of the company which does the housing work for the employer is not a criterion of the bona fide character of such work as an employers' housing scheme.

Company housing is as old as the industrial history of the United States. When industry passed from the home to the factory, company housing became necessary, since the colonial manufacturer was a pioneer who opened up new sites for factories at those points generally where water power was available. These sites were usually in

[1] Mr. Robert L. Davison, from the department of social ethics, Harvard University, was originally engaged by the bureau to undertake this survey of company housing in the United States, and was associated with Mr. Leifur Magnusson of the Bureau. Mr. Davison subsequently entered the armed forces of the United States when war broke out with Germany, after he and Mr. Magnusson had prepared the schedules and outlined the report under the general supervision of the Bureau. Mr. Davison also did some of the field work connected with the investigation, but the report in its final outline and presentation has been the work of Mr. Magnusson. Miss Elizabeth A. Hyde of the Bureau wrote Chapter VIII, on housing in the bituminous-coal camps of Colorado and Wyoming, and Chapter XIII, on the southern cotton-mill villages, the field work in both of which regions was in large part done by her.

[2] Practically the whole of this "Introduction and summary" has already appeared in the Monthly Review of the Bureau of Labor Statistics for November, 1917 (pp. 35–60). That article was also published separately by the Bureau and appeared likewise in the Proceedings of the National Housing Association, October, 1917, pp. 106–129.

undeveloped country, and force of necessity compelled the employer to provide housing accommodations for the labor which he brought to his establishment. This was the origin of the New England mill towns, some of which date back to 1791.[3] Among the early New England company towns is Lowell, Mass., founded in 1820. The company which entered that district had extensive real estate holdings, not an unusual feature of early industrial undertakings.[4] And in several of the New England cotton-mill centers to-day the operating companies own much property in the form of land and dwellings.

There was distinct development, if we may believe the early records, of autocratic control in these company towns. "Many colonial iron-masters ruled with almost feudal sway over a neighborhood settlement of their laborers and country people, and such enterprises often became the nucleus of a permanent village."[5] Among such single developments may be mentioned the building of Brady's Bend, Pa., in 1839, when the Great Western Iron Co. was formed and $500,000 invested in land and works in western Pennsylvania. Six years later the Brady's Bend Iron Co. purchased the property from the original company, which had failed, and built a steel manufacturing plant on this spot. It housed in its own tenements 538 laboring families.[6]

In the course of the present investigation, the Bureau of Labor Statistics found, in the bituminous-coal mining region of Pennsylvania and West Virginia, company developments dating from 1877 and from 1885. In the southern coal regions one community dated from 1871 and another from 1875. In the coal region of Colorado and Wyoming none antedated 1892, in which year four were founded.

The anthracite-coal region shows examples of company towns established as long ago as 1840. One company development was begun in 1850; another in 1857; one in 1858; two in 1860; and one in 1865, though this company reported that no building except the superintendent's house had been erected since that date. Another company reported that most of its houses had been built in 1870.

One iron-mining community in Alabama dated from 1880; a copper-mining community in Michigan, from 1866; a steel town in Pennsylvania, from 1850; another from 1854; one from 1860; and another from 1875. A steel-manufacturing town in Alabama dated from 1882.

In New England there was included a cotton-manufacturing town dating from 1835; one from 1848; another from 1867; and one from 1860.

The earliest cotton-mill community was found in Wilmington, Del., established in 1831, most of the houses of which had been built

[3] Clark, Victor S.: History of Manufactures in the United States. Washington, 1917, p. 404.
[4] Idem, p. 405.
[5] Idem, p. 187.
[6] Brady's Bend Co. Report, 1858. Cited by Clark, in History of Manufactures in the United States, p. 446.

between the years 1850 and 1860; a South Carolina community had been established in 1845; one in Georgia in 1850; and another in 1856. In all these cases some of the houses built, even in the early days, were part of the present development.

The more recent developments were found in the iron-mining region of Wisconsin and Minnesota, in the coal fields of Ohio and Indiana, and in the western metal-mining region. The shortage in industrial housing, which became acute during the war, gave rise to considerable building on the part of employees. Much of the war housing, particularly that of the United States Shipping Board, Emergency Fleet Corporation, was practically company housing. While the Government supplied most of the funds, the management of the enterprises was turned over to the shipbuilding corporations.

SCOPE OF THE INVESTIGATION.

The object of this investigation was to study the best and most representative work being done by employers to provide housing accommodations for their employers. Inasmuch as only the more significant representative work was included, very naturally the larger housing enterprises supplied the greater proportion of the basic information; but, in many instances, smaller enterprises were included in the survey because of their representative character, or because they illustrated points of special interest. On the whole, the better types of communities were covered.

The investigation covered two distinct types of communities, i. e., the manufacturing towns and the mining towns. Different classes of manufacturing towns were included, such as the cotton-mill towns of New England and of the Southern States, and the steel towns of Pennsylvania, Ohio, Alabama, and Minnesota. The mining towns naturally group themselves into the towns of the bituminous coal region and of the anthracite district; the copper towns of northern Michigan; the iron-mining towns of northern Michigan, Wisconsin, and Minnesota; the coal and iron mining towns in Alabama; the coal and metal mining towns of Colorado and Wyoming; the distinctly company towns in the copper and other metal-mining districts of Arizona.

The inquiry did not include housing conditions in seasonal industrial camps, nor housing carried on by railroad companies. No schedules were taken for the agricultural tenant towns of Texas.

In studying the housing work of the employer no attempt was made to cover the hygienic and sanitary aspects of the problem, except incidentally.

In this report effort has been made to describe and analyze those conditions and factors in the housing problem over which the employer who essays to provide housing accommodation has more or

less direct, responsible control. These include such matters as relate to the house and its plan and construction, size, number of rooms, state of repair, sanitary equipment, and the quality and character of exterior and interior finish—in short, its adequacy for the proper housing of the employees.

To present the technical side of the housing problem, inquiry was made as to the type and character of the town-site arrangements adopted by the employer; the agency which provided the public utilities, which carried out and controlled the various community functions, such as police and fire protection, care of streets, sanitary rules, collection of garbage, etc., and which provided the various community institutions—schools, churches, and hospitals. Some attention was given to town planning and street and lot arrangement in relation to the topography of the locality. Data were secured to show the type of house built, whether single or semidetached, flats, or row houses, the building material used, and the cost, as well as the year of construction. Inquiries were made with regard to the number of rooms, rentals, sanitary equipment, and manner of heating of the dwellings provided for the employees. Typical floor plans were secured.

The extent of the housing work in proportion to the annual pay roll and the total cost of the housing investment and the proportion of each employer's total labor force accommodated in company houses was ascertained. The further cost of the housing work is shown by the annual maintenance and repair charges and the annual rent receipts as reported by the employer. The methods pursued by the employer in carrying out the housing work, his manner of financing it, his policy as regards renting or selling, methods of collecting rent or purchase-price installments, policy as regards collecting either rent or purchase-price installments in time of sickness or unemployment, were all subjects of inquiry.

Finally, the employer was asked to give his reasons for engaging in housing work and to estimate the results to himself of his work. The results of the housing work by the employer are also shown by the proportion of the labor force reached by the housing work; the class of the labor force affected, whether skilled or unskilled workers; the existence of overcrowding—investigated only incidentally—and by the provisions contained in leases and deeds of sale.

Altogether 213 companies were scheduled, which operated 423 different establishments, employing 462,991 men, of whom 160,645, or 34.4 per cent, were accommodated in company houses. The following table shows the number of companies and establishments covered, the number of employees at the time of the investigation, which covered, generally speaking, the year 1916, and the number and per cent of employees housed:

TABLE 1.—SCOPE OF THE HOUSING INVESTIGATION.

Industry and State.	Number of companies.	Number of establishments.	Number of employees.	Number of employees housed.	Per cent of employees housed.
Bituminous-coal mining:					
Pennsylvania and West Virginia	32	[1] 114	78,218	43,877	56.1
Ohio and Indiana	3	4	1,287	688	53.5
Alabama, Tennessee, and Kentucky	24	29	[2] 18,694	[2] 15,035	80.4
Colorado and Wyoming	5	16	4,644	3,148	67.8
Total	64	163	102,843	62,748	61.0
Anthracite-coal mining	24	[3] 104	[4] 90,608	[4] 20,660	22.8
Iron mining:					
Michigan, Wisconsin, and Minnesota	10	33	[5] 5,433	[5] 1,447	26.6
Alabama	3	3	1,497	805	53.8
Total	13	36	6,930	2,252	32.5
Copper mining: Michigan and Tennessee	5	5	10,064	3,290	32.7
Other copper and gold mining: Arizona, New Mexico, and Colorado	6	6	5,398	857	15.9
Iron and steel and allied industries:					
Northern district	25	30	[6] 116,904	[6] 20,625	17.6
Southern district	3	3	3,180	930	29.2
Total	28	33	120,084	21,555	17.9
Manufacture of explosives	2	5	28,777	10,840	37.7
Textile manufacture:					
Northern district	6	6	[7] 10,624	[7] 2,047	19.3
Southern district	48	48	35,643	25,289	71.0
Total	54	54	46,267	27,336	59.1
Miscellaneous industries	17	17	[8] 56,020	[8] 11,107	19.8
Grand total	213	423	466,991	160,645	34.4

[1] One company did not report number of establishments.
[2] Not including 1 company with 500 employees; number housed was not reported.
[3] Two companies did not report number of establishments.
[4] Not including 1 company with 25,600 employees; number housed was not reported.
[5] Not including 1 company with 1,450 employees; number housed was not reported.
[6] Not including 7 companies with 21,050 employees; number housed was not reported.
[7] Not including 1 company with 700 employees; number housed was not reported.
[8] Not including 2 companies with 2,460 employees; number housed was not reported.

It need not be said that the investigation was not comprehensive, but merely representative, though taken over a considerable extent of territory.

The industries have been grouped so as to bring together localities where similar types of houses prevailed. This, however, was not possible in the "Miscellaneous industries" group, as so few companies were included, generally only one representing an industry, that to show them separately would render it easy to identify individual operations. Among the industries included in this group were salt manufacturing, zinc smelting, manufacture of grinding wheels, cordage and rubber manufacture, cotton machinery, silk and artificial-silk manufacture, arms and ammunition, lumber manufacture, etc.

SUMMARY.

THE COMPANY TOWN.

The chief characteristic of every company town is its uniformity, due to a tendency to erect houses of similar plan and type and to arrange them along rectangular lines of survey. The possibilities of architecture and town planning have been neglected. Another feature of the company town, which it shares with most other communities, has been its disregard of the advantages of planting trees, grass, and shrubbery as beautifying elements. This is particularly true of the isolated mining towns.

On the other hand, company towns are quite generally characterized by relatively wide streets and ample lots. There is no tendency toward land crowding, save in two or three instances where companies have been compelled to buy land within city limits where speculative values have forced the price up.

Generally speaking, company towns are unsewered and without a piped water system for a large majority of the dwellings. Dirt streets prevail, and many towns are without sidewalks or gutters. The smallness of these communities, however, and freedom from land crowding tend greatly to minimize the disadvantage from the lack of these utilities.

From a governmental point of view company towns are "closed," being private property. Such general community functions as street cleaning and lighting, health and sanitary regulation, and administrative policing are vested in the controlling company. There is a distinct absence of self-government in all company towns. It is rarely that company towns are found within the limits of self-governing communities; they are generally industrial satellites of larger cities or are isolated hamlets.

Company towns differ markedly in the matter of maintenance, even in the same section of the country and with the same class of employees. It is therefore reasonable to conclude that these differences are due to the care and attention given the matter by the company and not, as has been asserted, to the tendency of the workman to keep the premises in an unsightly condition.

THE COMPANY HOUSE.

The typical company house is a single or detached frame house consisting generally of four rooms, two of which are bedrooms, leaving a kitchen and one living room for general use. Stoves or fireplaces form the heating equipment. Company houses are generally without modern sanitary plumbing. They are for the most part lighted by electricity. The company house tends to become stand-

ardized in each locality, as respects both plan and material of construction, and even with regard to the color of the exterior. Certain types, however, are characteristic of different sections of the country; and in the eastern States there is a further differentiation between the manufacturing and the mining town, which is not true in the northern and southern States, where there is no essential difference in the company house in the manufacturing town and in the mining town.

The characteristic dwelling of the eastern mining communities is a semidetached frame house of stereotyped plan and exterior, with all houses in each community painted the same color. The typical house of the Southern States is a small four-room hip-roofed frame cottage or bungalow. In the southwest mining region this type also prevails, but it is not so substantially constructed, and is more likely to be equipped with modern sanitary plumbing. In the latter region practically only the skilled labor is housed. The mining camps of the West have adopted the hip-roofed bungalow style of cottage, and have constructed many of concrete blocks. The company house of the northern mining region and of the steel towns is the conventional story-and-a-half or two-story gable cottage of frame. On the whole, the companies in different sections of the country have adopted the type of house commonly erected by private home builders in the particular localities.

Rents of company houses are moderate and well within the means of the low-paid wage earner. Of 17,643 four-room dwellings 29.8 per cent rent for less than $5 a month; 39.5 per cent for less than $6; 58.1 per cent for less than $7, and 76.3 per cent for less than $8. Considering all company dwellings, 68.6 per cent rent for less than $8 a month. These rents, it should be recalled, were applicable in 1916, since which time there have no doubt been some increases.

COST OF COMPANY HOUSING.[7]

The cost of a few typical company houses in different sections of the country may be of some interest. Costs as here given include only cost of the house—not outbuildings or land or street improvements.

The cost of semidetached houses in the Pennsylvania and West Virginia mining regions ranges from $600 to $800 per dwelling, i. e. renting unit, of four or five rooms. A similar type of house of five rooms per family erected in Michigan in 1907 cost $825. The semidetached frame cottage in the New England States cost, in 1914, from $800 to $1,000 per dwelling.

[7] The costs to-day would be much greater than those given in this report, owing to increased wages and cost of materials. The increases would vary with the materials used and the locality.

The four-room miner's frame house in Ohio costs $600 to $800; similar houses in Colorado cost, in 1914, $750 each. A group of 40 houses was built in 1914 in Colorado for $700 each. A cement-block house of four rooms in Colorado cost $650 in 1900. The simple four-room house on open piers built in the South in 1917 cost $670; a group of 35 four-room two-story frame houses built in northern Minnesota cost, in 1910, $750 each. A four-room, one-story, one-family house of the ready-built type cost $1,500 in 1913 in Virginia; a five-room ready-built house of a similar type erected in New Jersey cost, in 1915, approximately $1,200. A four-room ready-built house erected in 1914 in Pennsylvania by a railway-equipment company cost $1,500. A four-room, one-family frame bungalow, neither ceiled nor plastered inside but having inside sanitary conveniences, erected by companies in Arizona, costs $1,000. These costs of typical company houses are cited merely by way of example, but even these few examples show how widely costs vary and how dependent they are upon local conditions and changes in the materials market from time to time.

COST OF MAINTENANCE.

The cost of housing to the employer is approximately $383 per employee housed, if calculated on the basis of the original cost of the houses alone, not including land or improvements.

Those companies, however, which reported an inventory or estimated present value of their houses show a smaller cost ($361) per employee housed. Both these figures are extremely low, even when consideration is taken of the fact that employers do housing on a large scale. This low cost reflects in a measure the relatively low grade of housing furnished in all but a comparatively few cases.

On his housing investment the employer gets a gross return of 8.3 per cent, a percentage based on the original cost of all houses as reported by 60 different companies. The total original cost of the houses, not including land, was about $15,126,125. Reports from eight different coal companies in Pennsylvania show a gross return of 11 per cent on a total inventory value of $2,855,912. In calculating these percentages average annual rent receipts for a five-year period (1911–1915) have been used. The gross returns received by companies in different sections of the country and for different industries vary considerably—e. g., from a maximum of 20 per cent on company houses of certain mining companies in Alabama to 6.2 per cent on the houses belonging to five steel companies in Pennsylvania and Ohio.

GENERAL ASPECTS OF COMPANY HOUSING.

Employers undertake to house their workmen primarily because there is a dearth of houses. In only a few industrial villages were there found vacant houses at the time of this survey, and that was because the houses were obviously bad. Aside from the immediate necessity for more houses other reasons moved employers to maintain at least a nucleus of company houses—the need of certain emergency men near the plant for the sake of added safety (as in mine operations in case of fire or accident); the desire for a stable supply of labor, married men particularly; and the belief that a more efficient labor force would thereby be secured.

It is extremely difficult to say whether employers accomplish their purpose. Certainly they do not supply nearly enough houses for all their labor force, as only one-third of the employees of the companies scheduled are accommodated in company houses. The cotton mills of the South house relatively the largest proportion of their labor supply, namely 71 per cent, followed by soft-coal mine operators in all sections of the country, who house 61 per cent. The smallest percentage housed, or 15.9 per cent, is in the copper and gold mining regions of the Southwest. This is due to the fact that the unskilled Mexican laborers are not generally housed by the companies.

While 165 out of 213 companies stated that their practice is to supply houses to all classes of their employees, preference is naturally given to men most difficult to retain; that is, the higher-paid skilled workmen. No definite data are available to show what proportion of each particular class of labor is housed in company houses.

Practically all companies state that they are satisfied with the results of their housing work; only a few report an unfavorable experience, the commonest complaint being that the housing business is unprofitable. There were received altogether some 350 replies to the inquiry asking for the results to employers of their housing work. Arranged according to the frequency with which they have been noted, the results of company housing are declared to be as follows: (1) A better class of workmen is secured, (2) there is greater stability in the supply of labor, (3) a reduction in the number of floaters, (4) better living conditions, (5) greater loyalty from employees, (6) more contented and (7) more efficient workmen, (8) a better control of the labor situation (that is, hire and discharge with greater freedom), (9) married men are attracted, (10) there is greater regularity of employment, (11) the workman secures a better house for less money, (12) it brings profit to the company, (13) facilitates part time, and (14) serves to advertise the company and to keep it favorably before the public. From this statement of results it is quite plain that housing is probably one of the most important factors in maintaining a steady

supply of labor; that is, it is a factor in reducing labor turnover, a problem which is now receiving a great deal of attention from employers.

As this survey was not conducted as a house-to-house investigation, it has not been possible to secure any information concerning crowding in company houses. Incidentally, however, some light has been thrown upon this question. A certain cotton mill in the Southern States required that each house should provide one employee per room. Furthermore, in general there is disclosed no policy on the part of the employer to restrict the keeping of roomers and boarders. Out of a considerable number of leases examined only a few contain such restriction.

Company housing is not merely a problem concerned with the provision of more houses for industrial employees; it not only affects the fundamental relations of employer and employee, but it also has wide social significance.

Many employers frankly recognize that a social responsibility rests upon them. Through their control of community streets, lights, public utilities, houses, recreational centers, and the industry which supports the economic life of their community employers are in a position to control the character of the community. The rules promulgated by the employer are readily enforceable as they carry with them the threat of discharge from employment.

It is difficult to see how this responsibility can be avoided in a mining town. The isolation of mining towns, the impermanence of many of them, the shifting character of the labor force, the absence of local self-government, are all factors which throw the responsibility upon the employer. In a manufacturing community usually placed near populous centers where community life already exists, and where other agencies are already established to provide community needs, the responsibility of the employer is not so great. It is therefore not necessary for him so thoroughly to control or dominate the life of the community.

But whether in the isolated mining community or in the thickly-settled city, the employer is placed in an advantageous position in relation to the housing problem. He knows the purposes which he wants his community to serve and can therefore lay it out with forethought, take advantage of the advice of experts, and consult town planners, architects, and large-scale builders. He knows how many families he will need to supply with houses; that is, he can gauge the supply of and demand for his houses. He can build on a large scale so as to cut down costs. He knows the type of labor he will want to house and can erect his houses to supply the needs of that particular class of employees.

CHAPTER II.—REASONS FOR SUPPLYING HOUSES.

The employer is impelled to supply houses for his men primarily because of an actual shortage of houses such as exists at present in most industrial communities, and such as will always exist at first in an isolated or temporary community which depends entirely upon the industry established by the employer. Employers also feel that there are certain specific results, particularly in relation to the character and loyalty of the labor force, to be obtained by supplying an improved type of housing. Furthermore, underlying the whole movement of company housing is the growing tendency toward the decentralization of industry which tends to increase the necessity for the employer to undertake housing.

DECENTRALIZATION OF INDUSTRY.

Industries become located at certain points principally because of a desire to be adjacent to the raw materials upon which they depend. Such location is determined by natural advantages. The movement is frequently termed "localization of industry." But there is also another movement of industry which tends to take industries away from the congestion which has been created by extreme localization. It is a movement away from city centers out into the suburbs or outside of the established city limits and into new towns or smaller cities immediately adjoining the larger center. This is a conscious movement directed by advantages foreseen and calculated. As a result of it towns and communities have been built up as single units or developments within a short space of time.

The reasons for this movement of industry away from the city are a desire for more land as well as for cheap land, lower taxes, lower rentals, and avoidance of congestion. The desire to get more light and air and quieter surroundings—wants arising from city congestion—was stated by one employer as a reason for moving out into a surburban community. The representative of another company called attention to the contagion of strikes in a city, due to the men living together under conditions of city life.

Transportation is an element in the movement and has greatly facilitated it; it has made it possible to widen the area of decentralization and to allow greater spreading out.

The extent of this decentralization of industry in the United States can be expressed in statistical terms available from the United States Census of Manufactures, as follows:

TABLE 2.—PROPORTION OF POPULATION AND OF NUMBER OF ESTABLISHMENTS AND NUMBER OF WAGE EARNERS OUTSIDE OF CERTAIN RECOGNIZED CITY AREAS COMPARED WITH TOTAL NUMBER WITHIN THE WHOLE INDUSTRIAL DISTRICT OF WHICH THOSE CITIES ARE THE CENTERS.

[U. S. Bureau of the Census, Thirteenth Census of the U. S., Vol. X: Manufactures, 1909.

District.	Per cent in territory outside of each city of total for district.				District.	Per cent in territory outside of each city of total for district.			
	1899	1904	1909	1914[1]		1899	1904	1909	1914[1]
Baltimore:					Minneapolis-St. Paul:				
Population	10.5	(2)	14.2	16.4	Population	0.6	0.5	0.6	2.5
Establishments	3.3	3.6	5.8	7.3	Establishments	.5	.3	.7	1.4
Wage earners	7.1	8.7	11.3	13.1	Wage earners	.8	.6	1.1	5.8
Boston:					New York:				
Population	55.1	56.0	55.9	55.1	Population	24.3	24.2	25.4	26.5
Establishments	42.5	43.6	41.5	43.4	Establishments	17.3	17.5	17.9	18.6
Wage earners	59.8	63.1	62.6	58.9	Wage earners	28.0	29.0	29.7	30.5
Buffalo:					Philadelphia:				
Population	7.0	9.5	9.3	14.2	Population	15.6	(2)	16.5	21.8
Establishments	4.7	4.8	5.7	9.3	Establishments	8.4	8.8	10.3	12.9
Wage earners	8.7	10.6	14.7	18.8	Wage earners	11.4	12.4	15.6	21.1
Chicago:					Pittsburgh:				
Population	5.8	(2)	7.2	11.4	Population	27.6	(2)	33.8	51.2
Establishments	2.0	2.3	3.1	7.6	Establishments	11.9	16.0	17.8	29.8
Wate earners	1.6	2.4	3.5	13.4	Wage earners	24.0	32.5	39.2	53.6
Cincinnati:					St. Louis:				
Population	31.1	(2)	32.0	32.3	Population	9.9	(2)	14.6	18.8
Establishments	17.5	16.5	20.4	18.8	Establishments	3.1	4.6	8.1	9.8
Wage earners	14.7	19.5	22.3	23.4	Wage earners	8.1	9.8	12.6	20.3
Cleveland:					San Francisco-Oakland:				
Population	8.0	(2)	7.5	8.1	Population	9.1	(2)	12.2	18.9
Establishments	4.0	4.9	3.3	3.6	Establishments	3.6	4.4	10.9	10.6
Wage earners	2.7	4.8	4.8	3.8	Wage earners	6.3	6.8	14.3	17.1
Detroit:									
Population	(3)	(3)	7.0	10.3					
Establishments	(3)	(3)	3.2	5.3					
Wage earners	(3)	(3)	5.8	20.1					

[1] Figures in this column obtained from Vol. I, Census of Manufactures, 1914.
[2] No population census in 1905. Thirteenth Census, Vol. X, Metropolitan Districts.
[3] Statistics for this district were not presented in census reports prior to 1909.

The returns of the census show an increasing proportion of population, the number of manufacturing establishments, and the number of wage earners in each of 13 industrial districts in the United States as outside of the established city limits of the principal city. Each of these industrial districts comprises a central city, together with certain outlying and neighboring towns or counties which make up a natural industrial unit. The outside area is classed as a part or adjunct of the central zone, because its manufacturing business is largely controlled by capital in the principal city and because the latter is also the principal distributing point for the whole district. From 1909 to 1914 the proportion of wage earners living in the outlying districts increased 12.9 per cent, while within the central zone the proportion increased 6.1 per cent.

The further fact that practically all company housing developments recently undertaken are new-town developments or are located in the suburbs of cities also shows how extensively industrial decentralization underlies company housing.

To meet in a practical way the progress of the movement, the employer builds not only his factory plant, but also houses for his employees. The development of house and plant must be simultaneous so that operations may begin at once and continue steadily. The employer desires to meet the movement away from the city with equal provision for his labor supply. For although rapid transit makes it possible for labor to live farther removed from its place of work than formerly, yet it is always necessary to have a certain nucleus of men near the plant or factory.

How far the employer has avoided the recurrence of the evils he has sought to escape in the city—"land sweating" and increase in land values, overcrowding, repetition of the slum in a word—by careful town planning, community control, regulations against overcrowding, and provision of comfortable and fairly artistic houses forms the subject matter of the subsequent pages.

TEMPORARY OR ISOLATED CHARACTER OF COMMUNITY.

Such enterprises as those of mining, brickmaking, and munition or explosives manufacture can not choose their location in or near cities; the first two must locate where their raw materials are found, while the last is required as a safety measure to seek isolation. The employer is therefore compelled to build accommodations for his enterprise. The only answer most mining companies were able to give to the inquiry as to their reasons for supplying houses was that it was absolutely necessary for them to do so; and many stated that they would gladly dispense with the housing work. The larger operators, however, generally saw the possibilities of the work. In addition to the necessity was the desire to improve the housing in such a way as to secure secondary or indirect results.

Most employers in the bituminous-coal regions pointed to the temporary character of the mines as a reason why they must supply houses; neither the miners nor private builders would build houses in a community which was expected to disappear within 20 or 25 years. Large scale housing operations in the munitions industry have also been undertaken to meet the requirements of temporary conditions.

It is in housing in remote and isolated localities that abuses are more likely to creep in than in settled and accessible communities. It is also in these localities that the "one-man" town is most likely to spring up and dominate the community, giving it a decided feudalistic air. The real "company town" is the product of industrial isolation as instanced by its greater prevalence in mining and its dominance in the early industrial history of the United States as already noted.

REASONS ASSIGNED BY EMPLOYERS.

REASONS ASSIGNED BY MANUFACTURERS.

The reason for supplying houses most commonly given by managers of manufacturing plants is that private interests failed to do so; the only way of securing accommodations for the labor force was for the employer to provide them. The desire to have a part or a certain class of the men, such as bosses, watchmen, or emergency men, near the plant is second in importance, while the belief that a better and more efficient class of labor would be secured, follows. In several instances it was stated that the purpose of the housing enterprise is to control the labor supply, and in several instances the company expects to provide cheaper quarters for its men than private interests will or can provide. An instance of how far some companies go in making the houses practically a subsidy to wages is a cotton mill which leases its houses from a third party and sublets them at reduced rates to its employees. Thus, in a certain cotton mill community in the South, the $15 house is sublet for $9, the $6.50 house for $3.30, and the $8 house for $6 per month.

Some of the other reasons assigned for undertaking housing were as follows: It pays as a business proposition; stockholders were interested in real estate company which built the houses; property was bought for plant extension (which shows the housing enterprise was merely an incidental feature); there was a feeling that employer owes employee something; as an experiment; to prove out factory-village plan as a new theory; to promote the general welfare of mankind; and to obtain supply of foreign labor.

Some of the reasons given show clearly the exploitative character of the undertaking, while others express a vague and conventional humanitarianism. What should be emphasized, however, is the general impression given that there is a dearth of houses and that private enterprise is failing to supply low-cost accommodations for workingmen. It is not possible, however, to say whether this is a reason why employers are led into housing work, or whether it is a result, for the work of the employer antedates that of the private builder and once established tends to keep rentals below the levels at which private industry can realize a profit.

In the southern cotton-mill districts, and in the southern industries in general, company housing is more prevalent than in the industrial districts of the North. This is probably so because industrial development is more recent than in the North, and the housing work by private builders has never kept up with it there any more than it did in the North, where in the early era of industrial development company housing was also relatively more widespread than

at present. Where the employer goes into a new district to organize and establish a new plant he must practically build his whole community; he assumes the responsibility for the creation of a new center of social life. And not until he has established the community and demonstrated the likelihood of its permanence do secondary interests establish themselves and social control and self-direction by the members of the community take shape.

REASONS ASSIGNED BY MINE OPERATORS.

The first and practically the only reason assigned by many mine operators for housing their men is that there are no houses available or likely to be provided. The mine is the only reason why community life has developed in the particular locality. The next most commonly assigned reason is that it is desirable to have men near to the operations in case of emergency as of accident or breakdown; but, it was noted by several operators, for the ordinary employees nearness to the plant is not so essential now because of improved communications. It is the experience of some of the southern districts that it is impossible to conduct operations without a certain nucleus of men in company houses to give stability to the labor supply.

The belief that a better class of men, that is, men of greater efficiency, will be secured is the next common reason, as is also the belief that greater stability in employment is attained. The desire to secure the loyalty of the men is also put forward as a reason for housing work, and two mine operators declared that their purpose is to control the labor situation better, one emphasizing the desire "to have men concentrated so as to have proper supervision over them, to better control them in times of labor agitation and threatened strikes." It was declared by another operator that the company houses had undoubtedly been a factor in winning a strike which had recently occurred.

Other variously phrased answers have been given by mine operators to the query as to their reasons for doing housing work. The following are noted: Matter of general decency; furnished houses at moderate rentals; improve living conditions; to make men loyal to company; set example for better housing; "unsettled labor conditions and high wages necessitated a better type of house than operators in the past were in the habit of furnishing," a statement which recognized the effect of raised standards of living as reflected in the housing problem. One superintendent in a very isolated mining town in Pennsylvania remarked that "the time is gone when it is possible to pack foreigners in boxes for houses; we must supply them with clean, homelike quarters; for neatness of the town tends to cheerfulness and contentment of employees. The operator must consider the welfare of his workers."

CHAPTER III.—METHOD OF CONDUCTING HOUSING.

HOUSING SURVEY.

The housing survey is the method by which the employer may ascertain the amount, the need, and the character of the housing to be undertaken. The method will differ according as the housing enterprise is preliminary or subsequent to the manufacturing or mining enterprise. If the building of the homes for the labor force must precede the beginning of business operations, the employer will need to be guided by the experience of others engaged in similar lines of business and by the type and character of the labor force he may desire; if he begins his housing work after his plant has been in operation for some time he is in a position to find out the desires of his men in the matter of houses by means of an inquiry among them.

The housing survey involves consideration of the probable number of employees to be provided with houses, their racial complexion, their distribution as married and single, and the type of house they desire. Consideration of the housing supply in towns near the works will enter into the survey. Such a consideration in fact led one employer not to go into housing and suggested to him the feasibility of constructing a trolley line from the neighboring towns to his factories inasmuch as there was an abundant supply of labor in those towns. In another instance, instead of building houses for the men, the company maintains a house-and-room list for its employees, a careful description of available houses being kept.[1]

Single	Double	HOUSES		Apartment	Terrace
Dist. No.		LOCATION			Price $
Lot	B'ld'g	Stories	Material	Roof	Mortgage %
No. suites	Rooms	Finish	Floors	Light	Held by
Sidewalk	Sewer	Water	Paving	Gas	Due
Years built	Bath	Tubs	Heated by		
Owner					Taxes per year
Address			Phone		
Remarks					Rent

[1] The attached is the form of record card used.

Another employer, in studying the problem of the future housing of his men, was able to compel the real estate companies of the neighborhood to undertake the work by threatening, as a competitor likely to lower profits, to do it himself.

The actual housing survey proceeds by the use of a questionnaire or card form of schedule calling for such information as the name, address, length of service, nationality and the citizenship of the employee; whether married or single; whether the owner of a lot or desirous of owning a house; and if the latter, type of house desired, size and number of rooms; the composition of the family (number of children and dependents, their ages, etc.). The following is a sample form of schedule used:

Heads of Families Desiring to Build Homes.

Name.....Factory.....Clock No.....
Address.....How long in service.....
Nationality.....Naturalized.....
Maried or single.....
Do you own a lot?.....Location.....
If not all paid for, how much is still due?.....
How much cash can you put toward building house?.....
Do you prefer house of one or two stories?.....
Number of bedrooms wanted.....
How many in family { Adults..... / Children.....
How many of these children are of school age?.....
Do you intend to make ——— your permanent home?.....

The information for these schedules may be secured by giving one to each employee to be filled out; by having each gang boss or foreman make one out for each man, or by having the foreman collect the cards after they are filled out by the men. The method of gathering the information entirely through the foremen probably insures the return of a larger proportion of the schedules. These schedules are then tabulated, and the results, when analyzed, show quite definitely the amount and character of the housing to be undertaken.

One employer used two schedules in making this preliminary survey. The second questionnaire was a detailed one and related primarily to the character of the houses wanted by those employees who on the first inquiry had shown their desire for a house. In this case, the company, on analyzing its returns, found that the largest number of men had signified their desire for a six-room house, the next largest number a five-room house, and the third group a seven-room house; but on actual construction the heaviest demand was for a five-room house on account of its being less costly than the six-room house. The survey did not in that instance prove as accurate a guide as was expected. Desires in the matter of a house are proverb-

ially uncertain, and a house on paper may seem wholly different when actually erected.

In order to ascertain the wishes of new men in the matter of housing, it would seem quite feasible to make some of these inquiries part of the application for employment. The replies would give a rough working basis on which to start the housing enterprise.

The institution of a survey, as stated, is the beginning of a systematic attack by the employer upon the housing problem; but because the housing work of the employer is likely to be looked upon as incidental to the principal business, the survey has rarely been considered or undertaken except in the most general way. All employers naturally roughly estimate the number of men whom they will have to house. Few employers have been found who have made preliminary surveys of housing needs and possibilities as described above, yet the need of it was strongly sensed in an indefinite way.

No mine operators were found who had made such an inquiry as here described. Almost without exception no preliminary investigation has been made beyond estimating in a rough way the probable tonnage and the number of men required to take it out. This estimate was based upon the knowledge of the engineer in charge. In short, the housing problem was not given any great consideration, little regard being had to the type of labor which would be attracted to the enterprise or the type of house to be built. It is possible, therefore, to summarize briefly the information secured on the point in question.

In the bituminous-coal region of Pennsylvania one employer based his operations on the estimate of 30 houses per 100 beehive ovens; but he later found it necessary to build 40 to 50 for each 100 ovens; another estimated one man to an oven; and if two men may be averaged to a house, as this investigation shows in that region, this estimate means an equivalent of 50 houses per 100 ovens. Three employers have been found who made an annual inquiry among their tenants as to the size of the family and the number of boarders kept, and as to their desires in the matter of housing. Such a system has been but recently adopted, a fact which shows the growing understanding of the advantages of keeping informed as to housing conditions and needs.

Of three operators included in Ohio and Indiana, two have given careful consideration to the labor supply in neighboring towns and limited their housing work accordingly; the third decided that semi-detached houses were relatively less expensive than single houses and therefore built the former.

One company out of the 24 reporting in the southern coal district, including Alabama, Tennessee, and Kentucky, had a coal vein of 4

feet. The company considered that in order to house its labor for the first five years of the life of the mine, and according as the difficulty of mining varied, the housing provided must be on the ratio of a four-room house for each 8 tons mined per day; for the second five years, for each 7 tons; for the third five years, for each 6 tons; and for the fifth five years, for each 5 tons.

Of five companies in Colorado and Wyoming, one reported having considered the number and class of employees to be housed; no company in the anthracite region, in the copper region of Michigan and Tennessee, or in the textile towns of New England reports having made a formal housing survey. This was likewise true in the iron-mining region of Minnesota, Wisconsin, and Michigan. One iron company in Michigan had built a model town on the basis of the experience it had had in housing its men in one of the centers of the iron industry in the State.

Of three companies reporting for the southern iron district in Alabama, one reports having made a slight preliminary survey for one of its white camps; and among the cotton mills of Alabama, Georgia, North Carolina, and South Carolina, 5 out of 48 had made only the slightest estimate of the probable number of employees they might desire to house; in other words, no formal survey was made of future needs in the matter of housing.

It may be interesting to note that one company has calculated three and a half employees to the family, and built houses accordingly, knowing the number of employees desired.

Twenty-seven companies were covered among the iron and steel allied industries. One of these, preliminary to doing any housing, gathered information concerning Philadelphia housing and utilized that experience. In 1913 one of the largest steel manufacturing companies in the Johnstown, Pa., district, before inaugurating a plan for the selling of its houses, which had up to that time been rented, undertook a survey as to the payments tenants might be expected to make in the purchase of a house, and listed all its houses, noting their condition, together with the name and wage of the tenant. Thus it secured a basis on which to proceed in the selling of its houses.

Of six companies engaged in copper and gold mining in the Southwest, one has put its housing work in charge of a man who has had housing experience in Mexico, and on the basis of that experience he has worked out a type of house considered suitable for Mexican labor. This is the only company covered in that section which is giving any considerable thought to the housing of Mexican laborers. However, it should be said that two other model mining towns giving consideration to the Mexican labor problem were in process of building.

Three out of the total of 17 companies whose industries are of a miscellaneous character and not separately classifiable, have undertaken formal housing surveys of the kind described.

TYPE OF HOUSING DEVELOPMENT.

The type of housing development is of interest primarily as showing how free or hampered employers have been in undertaking their housing enterprises. The possible types of development are four, in order of lessening degree of limitation upon the carrying out of the housing scheme: Lots laid out within the city subdivisions, already determined as to sizes, street width, and number and width of alleys; the subdivision not yet laid out, allowing of somewhat more freedom in development; the suburb of the city, with less restriction, only the lines of communication to it being already determined; and finally the undeveloped locality having no restrictions as to lot size, direction of roads, or uses of land. The employer under such circumstances may develop his community from the ground up, determine what shall be the size, direction, and width of streets and alleys, locate his recreation centers, and place such restrictions on the use of the land as he sees fit.

Also, from an architectural landscape point of view the greatest freedom exists where the housing scheme is to be undertaken on undeveloped land.

That employers are hampered but little by existing building regulations and city development in the planning of their housing projects is brought out in the following tabulation. Of 236 developments, owned by 213 companies, operating 423 establishments, 157, or two-thirds, are reported as located on undeveloped land, requiring the laying out of new towns. The employer has been in a position to lay out a new housing development free from all artificial limitations, and, as far as town planning is concerned, required to meet only conditions of topography.

TABLE 3.—TYPE OF LAND DEVELOPMENT OF 236 EMPLOYERS' HOUSING ENTERPRISES IN THE UNITED STATES.

Industry and State.	Houses built on land described as—						Total.
	Lots already laid out.	Subdivision.	Suburb.	New town.	Combination of types.	Not reported.	
Bituminous-coal mining:							
Pennsylvania and West Virginia			2	30		1	33
Ohio and Indiana	1	1		1			3
Alabama, Tennessee, and Kentucky				24	[1] 1		25
Colorado and Wyoming	2		2	11	[2] 1		16
Total	3	1	4	66	2	1	77
Anthracite-coal mining: Pennsylvania	3	2		22	[3] 3		30
Iron mining: Michigan, Wisconsin, and Minnesota				4	[4] 1	3	8
Copper mining: Michigan, Wisconsin, and Tennessee				5			5
Other copper and gold mining: Western district				5		1	6
Iron and steel and allied industries: Southern district				3			3
Manufacture of explosives				5			5
Textile manufacture:							
New England district	1	2		3			6
Southern district	1	12	9	25		1	48
Total	2	14	9	28		1	54
Iron and steel manufacture:							
Pennsylvania, Ohio, and Minnesota	6	8	1	11	[5] 1		27
Southern district				2	[6] 1		3
Total	6	8	1	13	2		30
Miscellaneous industries	2	6	2	6	[7] 2		18
Grand total	16	31	16	157	10	6	236
Per cent	6.8	13.1	6.8	66.5	4.2	2.5	100.0

[1] Combination of lots already laid out in a subdivision and in a suburb.
[2] Combination of lots already laid out and as a part of a new town development.
[3] Three types of development combined: (1) Lots laid out and in a town; (2) lots laid out and in a suburb; (3) in a suburb and in a town.
[4] Combination of suburb and subdivision.
[5] Combination of lots already laid out, suburb, and subdivision.
[6] Combination of lots already laid out and subdivision.
[7] Two types of development combined: (1) Lots laid out and subdivision; (2) subdivision and new town layout.

SITE AND ARRANGEMENT OF TOWN.

TOWN PLANNING.

In this investigation the attempt was made to secure principally information from employers who had built complete towns, owned and controlled by the company. Where such towns were covered, town planning became an element of some interest.

Town planning has regard for such matters as the subdivision of land, laying out of local and minor streets, principal streets and business centers, public and semipublic buildings, neighborhood and recreational centers, park systems, the water-supply system, and lines of transportation, both rail and water, industrial and residential areas (problem of zoning and districting), and the systematic articulation of all these utilities and functions.

The layouts of all towns may be classified as of three types: (1) Rectangular, (2) contour, (3) radial. By the first method all streets are laid out at right angles to each other regardless of the character of the surface upon which they are laid; by the second method regard is had for the character of the surface and streets are made to follow the natural curves or the profile of the land; and by the third method the rectangular survey is cut across by radial streets.

The rectangular method has been accepted in most town layouts because of its simplicity, economy of engineering and land use, and adaptability for indefinite extension. It is quite frequently accepted because it is the traditional method. The contour method is favored generally because of its artistic possibilities; it also has advantages of utility, such as obviating too heavy grades, facilitating drainage, and provision of open places for recreation. The advantage of the radial method in conjunction with the rectangular survey lies in the provision of diagonal streets, which are a saving in travel time and give better opportunities for provision of open spaces. Probably no single one of these methods is wholly made use of in any city as planned or developed; there is rather a combination of all three methods.

The real problem in city planning is not so much the acceptance of any particular type of layout as the selection of the best points of each, having in view the functions to be subserved by any particular street, alley, or highway. For the employer, however, who builds a large number of quite similar houses in one locality, careful contour town planning, it was pointed out and was quite observable, has special advantages. Short curved streets relieve the monotony of architecture of the houses; no long views are afforded which tend to emphasize similarities, as for instance in a group of row houses; houses set on short curved streets expose to the passer-by views from varying angles.

The layout for a town in which practically the only types of houses constructed are the semidetached, the four, five, or six room dwellings, some old colonial semidetached houses, and a few rows may easily be made so as to give the general impression of pleasing symmetry and harmony. The landscape work can be made to offset any monotony or repetition of architecture. (Figs. 1 and 2.)

A certain flat layout in a mining district was given beauty and symmetry by the judicious use of a central wide diagonal street and the retention of a natural highway in the angle formed by two small streams. Figure 4 shows a general layout of the town.

Economy in the use of land is secured by careful planning. In Figure 5 is shown the layout of an industrial village in one of the Eastern States. A pleasing arrangement of row houses, as well as great economy in the use of land, has been secured.



FIG. 1.—CAREFUL TOWN PLANNING ON A SMALL SCALE. ALL HOUSES SEMI-DETACHED.

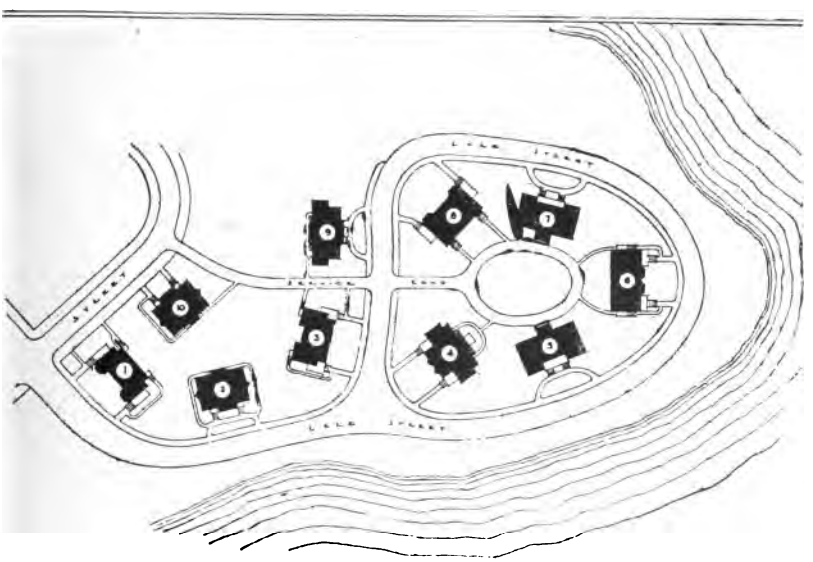


FIG. 2.—LAYOUT OF TOWN SHOWN IN FIG. 1.

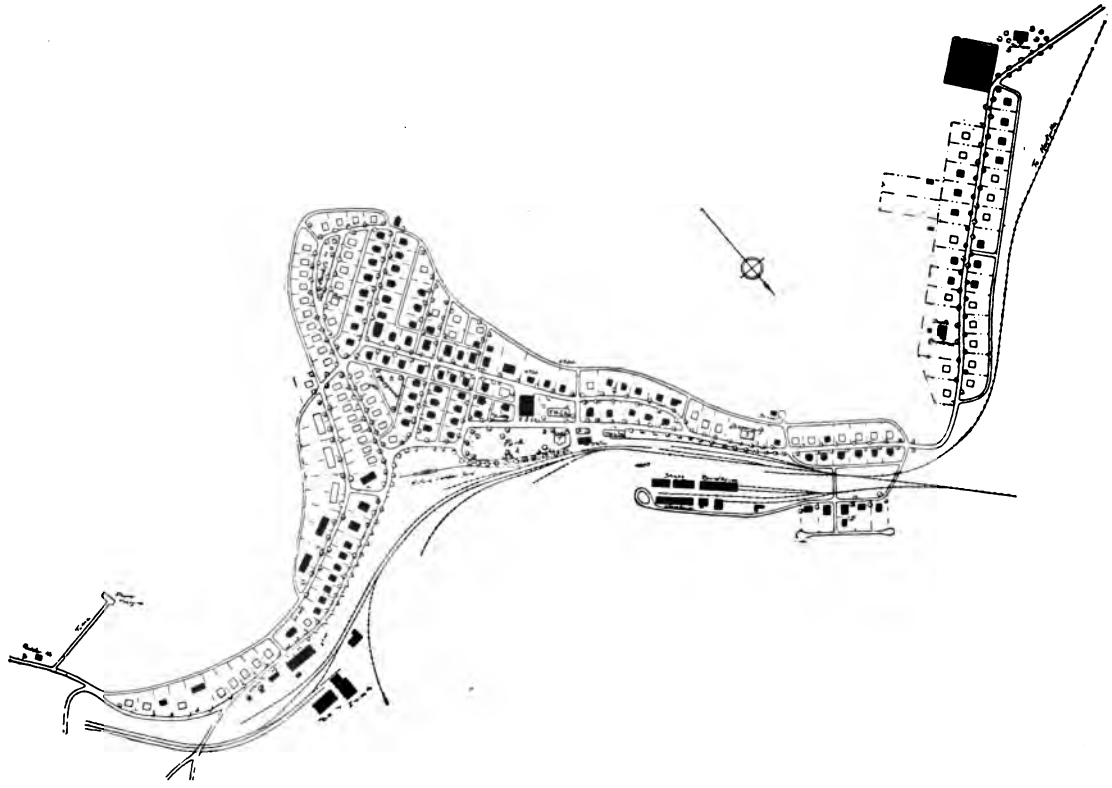


FIG. 3.—MODERN IRON-MINING TOWN IN WYOMING.

Detached layout caused by mountainous character of country.

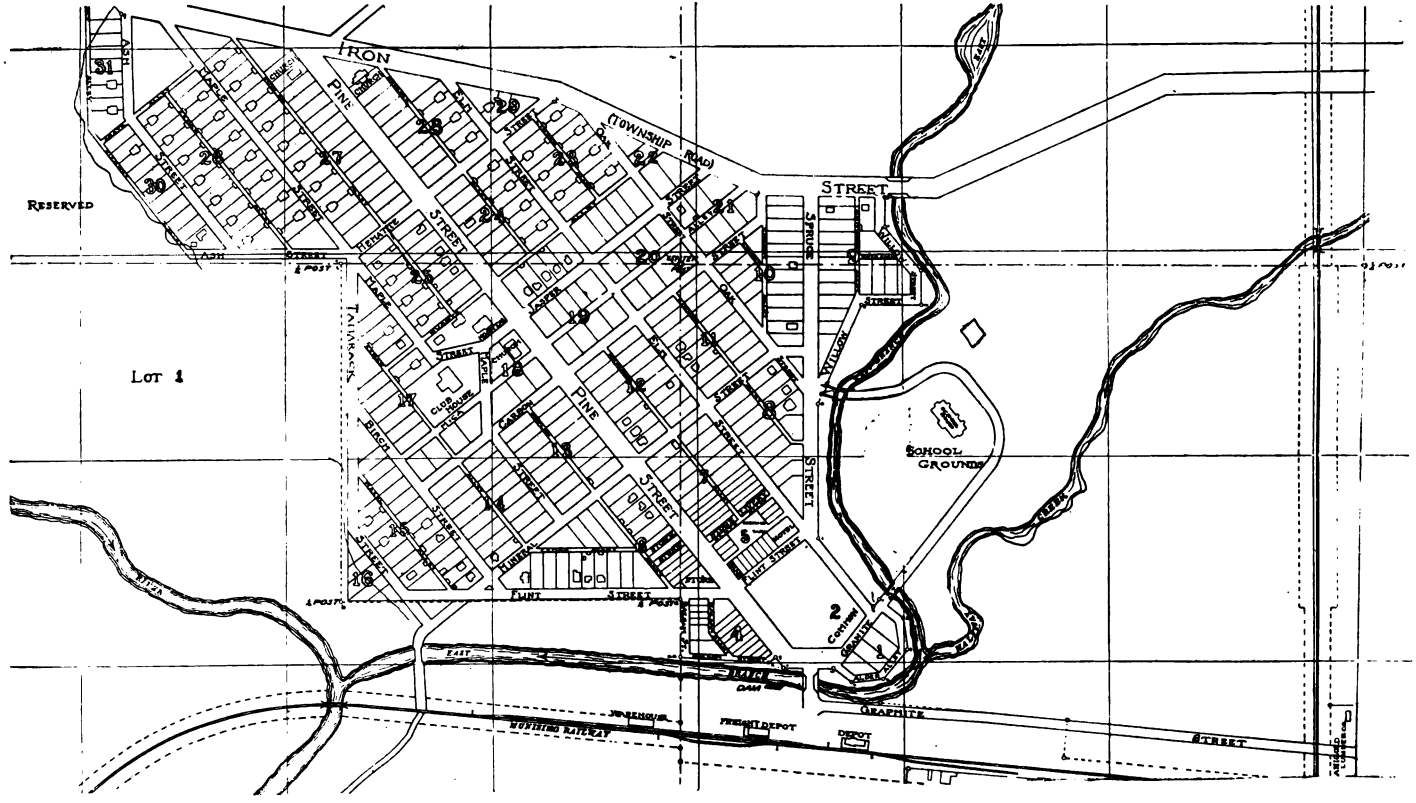


FIG. 4.—MODEL IRON-MINING TOWN IN NORTHERN MICHIGAN.

Rectangular layout, central radial avenue, short cross streets.

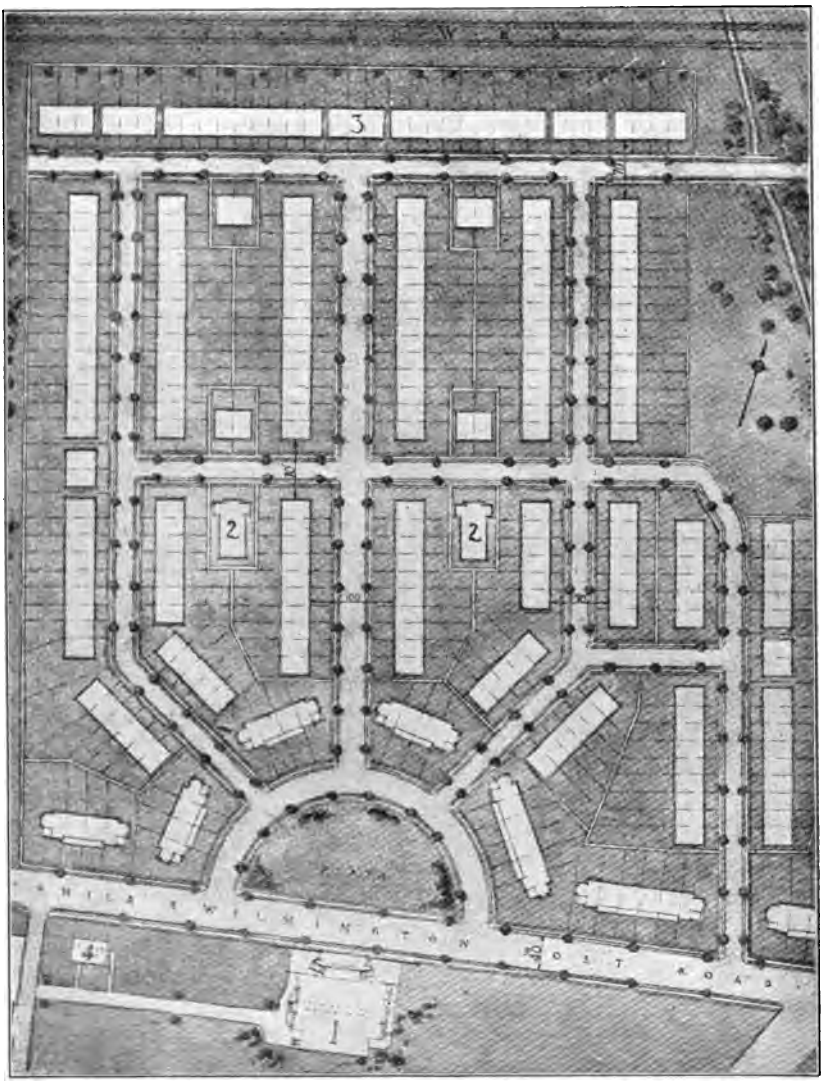


FIG. 5.—COMPACT TOWN PLANNING TO SECURE ECONOMY IN LAND USE.

Row houses, but open backyard spaces.

The obvious and immediate advantage of scientific street planning and laying out are thus emphasized by one employer, who may be quoted as typical of those employers who appreciate the advantages of the town-planning principle:

> Every effort has been made to save the natural beauty of the country. The plan worked out shows full recognition of this important feature.
>
> The main object in locating streets has been to secure ample width to provide for the traffic of the future as well as of the present city. All streets have been made as direct and convenient as possible. They have been closely fitted to the hills and valleys to reduce grades to a minimum, thus providing the best transportation facilities and lessening the expense of construction.

About 30 communities, or about one-seventh of the number included in the study, have been laid out with some observance of town-planning principles. Such communities also were the more recently established ones. Frequently the town planners have been hampered by limitations placed on their work by the company officials who have not been quite convinced of the practicability of the town-planning idea. Manufacturing employers more than mine operators have seemed inclined to adopt systematic community planning in their housing schemes, probably for the reason that manufacturing towns give greater prospects of permanency than mining towns.

Mine owners, however, also are beginning to take greater interest in their town layout, as two factors of vital importance to them must be considered: (1) Economy of space, and (2) accessibility to the operations for the labor force. The mountainous mining regions offer special difficulties which require to be treated in a special way; not merely contours, but location of the ores, fixed and predetermined, are to be taken into consideration. In the mountains there is very frequently an actual scarcity of space in which to erect houses.

Nearness to the mines frequently has to be sacrificed to conditions of health and comfort; thus in the coking region it is highly desirable that the town be placed not too near the coke ovens, on account of the smoke of the ovens. Travelers through the coke region can not avoid noticing the hillsides burned barren by the noxious gases of the beehive ovens. Yet all too many towns were found placed not only immediately adjoining the ovens, but with no consideration to the direction of the prevailing winds in the region. With prevailing winds from the west, houses to the east would be constantly enveloped in smoke. Consequently conditions of dreariness and desolation were quite common in the region.

Furthermore, it was pointed out by some operators that because of improved means of communication, nearness to the mines is not so essential now as formerly. This is particularly true in the bituminous and anthracite coal regions of Pennsylvania, which are situated in fairly closely settled regions. Workers in the bituminous-coal region of Pennsylvania commuted from neighboring cities as far as 7 miles

away. It is less true of the western mining country and some of the newer mining developments in West Virginia, Kentucky, and Tennessee. Isolated "patches" in the bituminous region still existed by reason of pure inertia, one of the more farseeing managers remarked. It seems altogether unfortunate that the scattered locations of formerly individually owned mines were not consolidated into a single town with developed community life at the same time that the mines came under single corporation control.

As by far the largest proportion of all company towns has been established either in isolated places or on the outskirts of cities, there has been great opportunity for the practice of the fundamentals of town planning on the part of employers. None the less the rectangular system of town planning has been the prevailing one and the larger aspects of town planning ignored. The reasons for using the rectangular survey have been:

(1) Cheapness from the engineering point of view; curved streets too costly;
(2) Simplicity and facility in surveying;
(3) Economy of space;
(4) Custom of district; people used to straight streets;
(5) Level ground;
(6) Easier to maintain streets;
(7) Convenience;
(8) Small town and no possibility of extension of town to justify diagonal streets;
(9) Convenience in case of fire protection; greater accessibility of continuous and straight streets;
(10) Greatest number of houses per acre;
(11) Land to be used more as garden land.

Indiscriminate use of the rectangular system of town survey has resulted in bad grades in some company towns—12 per cent in one steel town in Pennsylvania and 14 per cent in another. Many mining towns, both in the anthracite and the soft-coal region of Pennsylvania, show instances of equally excessive and almost impossible grades. While obviously it is not possible to avoid grades altogether in mountainous mining towns, much can nevertheless be done in this direction.

WIDTH AND CHARACTER OF STREET.

Practically without exception streets in all company towns are of ample width. Exact widths are not generally reported.

Generally all streets in any one town have been made the same width; in a few of the more carefully developed towns distinction has been made between principal and minor streets. The greatest width in the case of principal streets has been 100 feet; minor streets average about 30 feet.

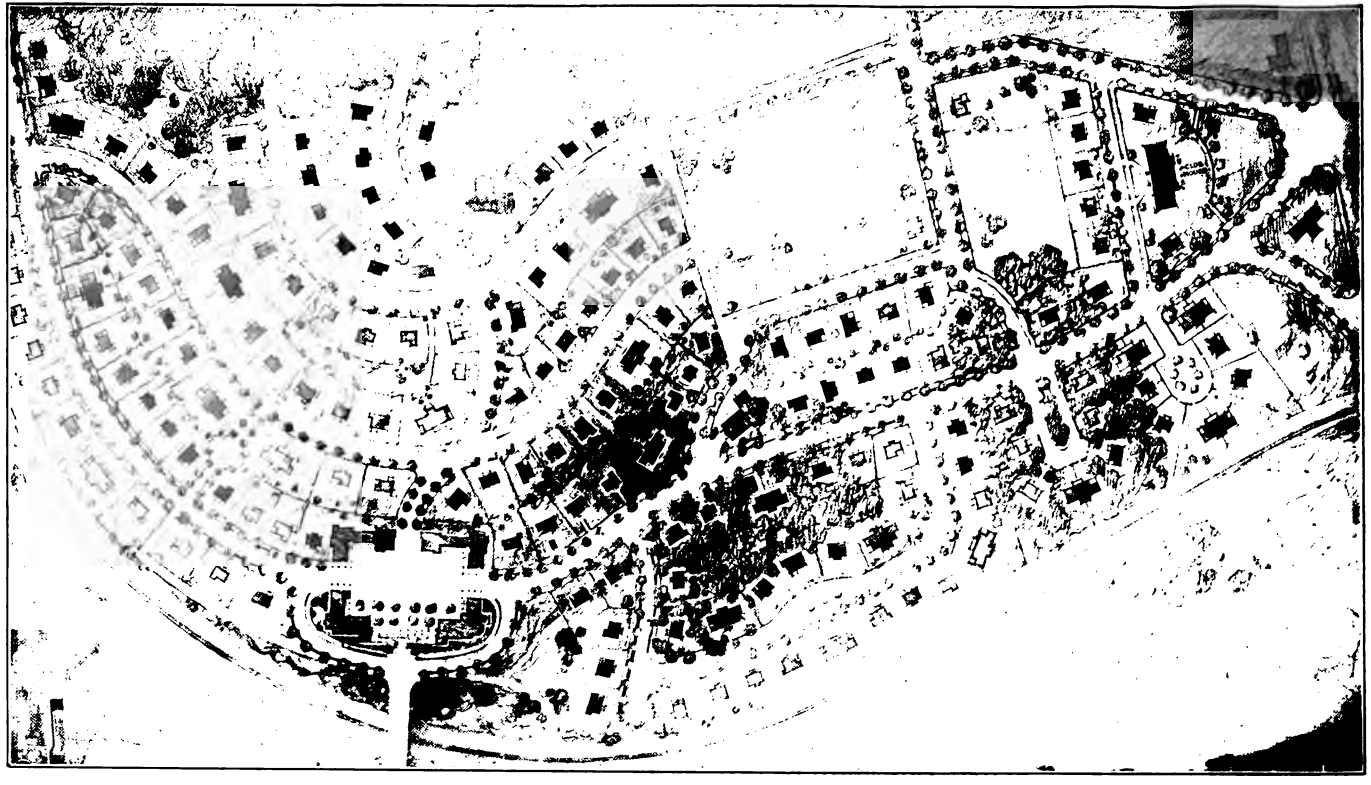


FIG. 6.—MODERN PLANNED VILLAGE IN NEW ENGLAND. CONTOURS CLOSELY FOLLOWED.

Note specially adapted corner houses. Houses and lots sold to employees.



FIG. 7.—PRACTICAL USE OF ALLEY IN A MINING TOWN IN MINNESOTA, SHOWING GARBAGE REMOVAL, WOODSHEDS, ETC.



FIG. 8.—MINING TOWN IN MICHIGAN.

Note garbage cans in street in front of houses. One effect of no alleys and lack of careful maintenance.



FIG. 9.—ACCESS TO REAR OF HOUSES WITHOUT ALLEY.

Passageway to rear between 4-family row houses, made necessary by high bank in rear. Note fine condition of lawn and absence of fences.



FIG. 10.—NO ALLEY. STONE CIRCLE FOR BURNING PAPERS AND HOLDING ASHES.



FIG. 11.—ALLEY IN HIGHER-CLASS RESIDENCE DISTRICT OF EASTERN IRON AND STEEL AND SHIPBUILDING TOWN.



FIG. 12.—ALLEY IN AVERAGE RESIDENCE DISTRICT OF EASTERN IRON AND STEEL AND SHIPBUILDING TOWN.



FIG. 13.—FORMAL PARKING ON STREETS OF A COMPANY TOWN LAID OUT ON THE RECTANGULAR SYSTEM.

Note use of hedge, instead of spikes or picket fence, to prevent cutting corners.



FIG. 14.—HILLSIDE STREET IN NEW ENGLAND COMPANY VILLAGE.

Note trees in yards and absence of fences. Equally as pleasing as formal parking.

Throughout mining towns the streets are not paved; open roads are the rule. In the iron-ore region fine waste ore dust is used with success for surfacing. In the iron-mining and steel towns of the South dolomite screenings are found satisfactory for this purpose. In the arid southwest mining communities lack of paving or surfacing does not appear to be a serious defect. In the Pennsylvania region coal dust and cinders are employed, but are rather disagreeable in the wet season. Only one community in the southern mining towns had macadamized streets and asphalt walks; this was true also of a few communities in the anthracite-coal region; crushed rock, plentiful in the region, was used in the northern copper country of Michigan; oiled roads have been provided in a certain western mining town.

Iron and steel towns in the northern district (Pennsylvania, New York, Ohio, Illinois, Maryland, Minnesota, etc.) are brick or concrete paved in a few instances. Oiled cinders have been used in one town, and asphalt in another.

A few companies, while providing wide streets, have not paved the whole of the roadway, but only a central portion of 16 or 18 feet, a practice found economical, quite satisfactory, and making for neatness.

It is proposed for a mining town near Birmingham, Ala., to eliminate the ordinary street between the houses and to confine traffic to the alleys, put the street proper into grass, having only the sidewalks in front of the houses. This method of improving front streets has not been put in practice as yet, and its success is still problematical.

Alleys are the rule in company towns; only a few towns are without them. The prevailing width is 15 to 18 feet.

Alleys are a great convenience in mining towns where sewer systems do not exist. Sewage disposal and rubbish collections are simplified by the alley. (Fig. 7.) Lack of alleys in mining towns meant in one instance the placing of trash and ash barrels out in the front yards and on the streets. (Fig. 8.) The need of access to the rear yard was secured in another town by providing a special path or roadway between the houses. (Fig. 9.) And in another instance where no alleys were provided, circular stone receptacles were constructed on the back lots and in these all rubbish and waste were burned. (Fig. 10.)

In a certain town in one of the North Central States the alleys in the low-rental group of houses were placed next to the houses. The space between the houses and alleys was not grassed but covered with gravel. The area in the center of the block was then divided into garden plots for the tenants, each family in the multiple house being assigned a plot. In other sections of the community the alley—16 feet wide and concrete paved—was cut through the center of the block.

In the better-class residence district of an eastern iron and steel and shipbuilding town, the alleys were flanked by well-kept hedges, 22 feet apart. The cinder roadway is 12 feet wide. The garbage cans are placed close to the hedges so that they are inconspicuous. The alleys present a remarkably neat and attractive appearance.

If outbuildings are permitted and certain domestic animals are kept, the alleys seem almost a necessity. They have also been used for the placing of underground piping for sewer, water, or gas, so as to obviate tearing up the paved streets when repairing or installation is necessary.

PARKING.

Provision for a strip of parking between the sidewalks or paths and the roadway is not generally made in company towns. Very few also have established a central parking strip. As a rule, however, the houses are set well back from the street, 20 feet or more. Model company towns planned and executed by technical town planners make provision for parking areas along the streets.

Trees on the lots, provided no fences are erected, are perhaps equally as pleasing as parked areas. Parking, however, is largely a matter of taste, but concerning the provision of trees there appears no difference of opinion.

Instances abound where a little thought would have shown the possibility of preserving the natural trees and shrubbery of the locality. In a certain model copper-mining town of the Southwest trees have been carefully preserved even though standing in the middle of the street.

DISTRICTING AND RESTRICTIONS.

The technical districting of land areas in the company town for special uses—i. e., for factory or industrial purposes, for the distributive tracks, or for residential purposes—is not generally practiced by employers. This is equally true of other cities and communities almost everywhere. Neither in company towns nor in the privately developed cities, until very recently, has legal classification been made of the uses of land with a view to protecting the original and distinctive character of a neighborhood. Limitations on the use of land are only occasionally contained in the deeds to property. There is always a tendency, however, in the company town to place the stores in the center of the community and to group houses around them. Such residential districting as is practiced relates mainly to the creation of a general residence district, separate from the industrial and store center.

The ground for the necessity or desirability of certain limitations on the indiscriminate use of land by private holders is thus set forth by one company in Ohio which is selling to its employees:

In order to foster and maintain attractive, homelike conditions throughout the allotment, it is necessary to safeguard each owner from intrusion on his comfort and convenience by his neighbors. The only way is clearly to state certain definite restrictions on the use of the property, and to apply them to *all* buyers.

At first glance it is natural to fear that interference with a man's right to do as he will with his own is not for the best. But experience is proving all over this country that while restrictions may be accepted first with suspicion, yet where they have been in force for any length of time owners are enthusiastic about their success. Moreover, the value of the property is increased by a knowledge that agreeable conditions are permanent and by the assurance that no owner will be allowed to annoy his neighbors. The company wishes to sell land only to such employees as intend to make permanent homes and who are willing to cooperate in doing their share toward the welfare of the community.

Aside from provisions against the keeping of saloons or the following of noxious trades contained in all leases and deeds of sales, such other limitations as are stipulated relate to the keeping of domestic animals, the type of fences and outbuildings, type and cost of house, etc.

The fullest and most complete restrictions found in practice by any of the two hundred and odd companies included in the study of the Bureau are the following:

1. Creation of residence districts.—The property shall be used for private residence purposes only. There shall not be permitted or maintained upon any lot, or part thereof, except on certain lots specified, any trade, business, or profession incon-sistent with and apart from occupation for private residence, but there may be maintained ordinary house industries such as taking of boarders, dressmaking, or use by a physician, but such other business, the nature of which shall be approved by ——— may be conducted on the aforesaid lots; provided, however, that on no lot, or part thereof, or building, structure, booth, tent, or other place thereon, shall be kept or maintained for sale, barter, or disposal, intoxicating liquors or habit-forming drugs; no obnoxious, dangerous, unlawful, or offensive thing or use which shall be objectionable to a neighborhood of dwelling houses, including use as a dump, shall be permitted or maintained upon any of said lots.

2. Minimum cost of residence and general design.—No residence shall be built on any lot or lots costing less than the minimum amount herein specified.

The position, location, and materials and design of all buildings, including outbuildings and all alterations, shall be subject to the approval of ——— landscape and architectural advisers, in order that a good effect in the whole allotment may be maintained.

3. Building line.—No building shall be erected on any lot with its main front wall nearer the street than is shown by a schedule, ranging from 15 to 25 feet.

The location of such main front walls may be fixed by the grantor at a point not more than five (5) feet farther back than that fixed in said schedule, at its option, so as to prevent building in a straight line.

On corner lots, however, the residence may be built within 15 feet of the side street line.

4. Porches and projections.—No porch or other minor part of any house shall project more than 5 feet nearer the street than the building line, nor shall any house be erected on any of said lots with the main side wall nearer than 6 feet from the side line of such lot or lots.

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5. Single and double houses.—Only one residence shall be built upon any lot; provided, however, that if any person should purchase two lots, then a double house may be built upon such two lots across the center line, but subject to the restrictions herein in other respects.

6. Fences.—No fence or other solid obstruction shall be built upon any lot nearer to the front than 60 feet. On corner lots, however, the fence in the rear may be built not closer to the street line than the established building line for that street. No fence shall be built over 4 feet in height, unless the fence be a hedge, which may be allowed to attain a height of 6 feet.

7. Outbuildings.—The barn or garage, if any, shall be built of the same material as the house to which it belongs, and shall be placed on the rear of the lot, and in no case nearer to the front thereof than the rear line of said house.

8. Easements.—The following rights, rights of way, and easements are reserved by the said grantor, its successors and assigns, namely:

The right and privilege of granting to telephone and electric light companies the right to string wires or pole lines within 1 foot of the rear line of any lot or lots, as the said grantor may determine from time to time, including the right to such grantor to enter upon said premises at all reasonable times to install or repair such telephone and electric light lines.

Said grantor reserves the further right to grant to a street railway company the right to build a street railroad along ——— in and across said allotment, upon such terms and conditions as it may deem proper.

Said grantor reserves the further right to itself, its successors and assigns, to enter upon any of said lots for the purpose of repairing any sewer that may run through any such lot; upon being repaired such property to be put in as good condition as before.

9. All of the restrictions, conditions, covenants, charges and agreements contained herein shall run with the land and be perpetual; *Provided, however,* That at any time after January 1, 1928, the owners of the majority of the foot frontage on both sides of the street, in any block between intersecting streets in said allotment, may, by agreement in writing, duly recorded in the recorder's office of ——— County, ———, change and modify the restrictions herein applying to any such block, except the restriction relating to the sale or barter of intoxicating liquors, and the restriction relating to the use of any obnoxious, dangerous, offensive or unlawful thing.

10. Right of reentry.—Violation of any of the restrictions, conditions, or breach of any of the covenants and agreements herein contained, shall give the ——— company the right to enter upon the property upon or as to which such violation or breach exists, and summarily to abate and remove. at the expense of the owner thereof, any structure, thing or conditions that may be or exists thereon contrary to the intent and meaning of the provisions hereof, and the ——— company shall not thereby be deemed guilty of any manner of trespass for such entry, abatement or removal.

The provisions herein contained shall bind and inure to the benefit of and be enforceable by the grantor, or by the owner or owners of any property in said allotment, their legal representatives, heirs, successors and assigns, and the failure of the grantor or any property owner to enforce any of such restrictions, conditions, covenants and agreements herein contained shall in no event be deemed a waiver of right to do so.

Any and all of the rights and powers of ——— company herein contained may be assigned to any corporation or association which is now or may hereafter be organized which will assume the duties of —— company hereunder pertaining to the particular rights and powers assigned, and upon any such corporation or association evidencing its consent in writing to accept such assignment and accept said duties it shall, to the extent of such assignment, have the same rights and powers and be subject to the same obligations and duties as are given to and assumed by the grantor herein.

It may be noted that a special district is reserved for stores. The fixing of a building line is not sufficient for that purpose, as was thought to be the case in a steel company in a town in Pennsylvania. The company built on lots already laid out, thinking that a building line would keep out stores. Dwellings, however, have been converted into stores, and stores have been built back of the building line. Similar development has taken place in all cities in spite of a mere building-line restriction.

The following are restrictions placed upon property sold by a certain Massachusetts company to its employees. They illustrate the type of restrictions adaptable when the entire housing development is exclusively a residential one:

1. The property shall be used for private purposes only and shall not be used for commercial, manufacturing or other trade or institutional uses.

2. No buildings shall be erected or maintained thereon except private dwelling houses with cellars, each for occupation by not more than two families; and private garages and hen or fowl houses not more than one story in height, for the sole use of the owners or occupants of the lots or plots upon which such garages and hen or fowl houses are erected.

3. No horses, cattle, hogs or other live stock and no poultry, except hens or fowl to a number not exceeding 25, shall be permitted or kept upon this property.

4. No cesspool or privy vault or other source of annoyance shall be constructed or maintained after a sewer is available, adjacent to the property.

5. No building, fence, wall or other structure shall be erected or maintained nor any change or alteration made therein unless the plans and specifications therefor showing the nature, kind, shape, height, material, color scheme and location of such structure or lot to be built upon shall have been submitted to, approved in writing by, and a copy thereof, as finally approved, lodged permanently with the company.

6. No building or part thereof except steps, one-story porches, bay, low and oriel windows, shall be erected, permitted or maintained within 20 feet of any street or within 15 feet of adjoining lot lines.

No garage shall be erected in front of the rear line of any dwelling house without special permission in writing obtained from the company.

7. No dwelling houses shall be erected or maintained which shall cost less than $2,500.

8. Easements and rights of way are reserved for the erection, construction and maintenance of poles, wires, pipes and conduits for the transmission of electricity, water or steam for all purposes and for public and private sewers and drains and for other purposes included within the performance of any public or quasi-public utility or function above or beneath the surface of the ground. Except when necessity demands, these easements shall be confined to the rear three feet of the property herein conveyed.

9. The company shall have the right, without liability for damage for trespass, to enter upon the property for the purpose of determining whether these restrictions are being complied with, to abate any construction or condition in violation of said restrictions, and to exercise its powers under the easements reserved above.

Somewhat different are the following restrictions enforced by a company town in central Pennsylvania—different as respects requirements in the type of house which may be built upon land purchased by the employee from the company. The restrictions quoted are

contained in each individual deed. The decision as to whether or not a lot may be used for business purposes, the minimum cost of a house on any particular lot, and the depth of the building line is made for each lot at the time that it is sold, and not for all lots or groups of lots at the time the land is plotted and placed on the market. This is a practice contrary to that in true districting, and is of interest for that reason:

And the said part— of the second part, for ———, heirs and assigns, the owners or occupiers of the above-described lot of land, do— hereby covenant and agree, to and with the said ———, heirs and assigns, that ——— the said part— of the second part,———, heirs and assigns, shall build and at all times hereafter maintain in good condition a substantial sidewalk of the same material, character, and construction, built and maintained by the owners of other properties in the same neighborhood, and failing so to do the said ———, heirs or assigns, may build and maintain the same at the cost and expense of the part— of the second part, ———, heirs and assigns, which the part— of the second part, heirs and assigns, hereby agree to pay, and shall at all times hereafter forever leave unbuilt upon and unobstructed, except by steps, cellar doors, piazzas, bay windows, fences, trees or shrubbery thereupon, the ——— feet in depth of the said hereby granted lot fronting on the said ———, and that neither ——— nor any nor either of them shall or will at any time hereafter erect or build, or cause or permit to be erected, built, or maintained, upon the hereby granted lot of land, or upon any part thereof, any hospital, hotel, tavern, drinking saloon, piggery, blacksmith, carpenter, machine or wheelwright shop, steam mill, tannery, slaughterhouse, butcher shop, skin-dressing establishment, currier shop, livery stable, glue, soap, candle, lamp black, poudrette, or starch factory, or any factory of any kind where power shall be used, or any building for the manufacture of malt or spirituous liquors of any kind, or any building for offensive purposes, or occupation, trade, calling or business, which will in anywise be dangerous, noxious, unwholesome or offensive to the neighboring inhabitants; nor shall the premises or any part thereof, be used for any of the above-named purposes, nor shall any building thereon be converted into any such building, or used for any offensive occupation or purpose hereafter forever; that neither the land hereby conveyed, nor any part thereof, shall be used for any business or manufacturing purpose of any kind or nature whatsoever, except by permission of the said ———, heirs and assigns, given in writing, setting forth the nature and character of the business to be done (which shall not conflict with or violate the restrictions contained herein) and the style and value of the buildings, which shall be constructed thereon for that purpose; nor shall the land hereby conveyed, or any part thereof, be laid out or used as a cemetery; that no fence shall be built, constructed or maintained, on any part of said premises, unless the nature, kind, shape, style and material shall have been first made known and shown to the said ———, heirs or assigns, and shall have received his or their approval; that no outcloset or privy shall be maintained or erected on any part of said premises, unless the same be at least 8 feet wide, 10 feet high and 10 feet long; that no shed or structure of any kind shall be erected on the land hereby conveyed, or any part thereof, before a dwelling house or building for business purposes has first been erected; and shall not at anytime thereafter erect, build, maintain, or permit to be erected, built and maintained on the premises above described, or any part thereof, any building, unless by the permission hereinbefore provided for, except a dwelling house and outbuildings appurtenant thereto, or more than ——— dwelling house ———, and the said dwelling house shall not be less than two stories in height and the cost thereof shall not be less than ——— dollars, and must not have what is commonly known as a flat roof, and no barn, stable, coop or other outbuilding shall be erected thereon closer to the street front than 75 feet; nor shall any

dwelling house for the use and occupancy of more than one family be erected or maintained on said premises, or any part thereof, unless the plans for the same shall have been first submitted to and approved in writing by the said ——, heirs or assigns.

Company towns should lend themselves to the districting idea, as it is very much easier to plan for their future growth than for that of the ordinary industrial city of uncertain future. Employers can forecast fairly well the size of their town by knowing somewhat definitely its future growth. A mining town, particularly, laid out on a conceived plan, is in little danger of finding its plan inadequate to its future needs; there is small risk of unforeseen obsolescence, as the length of the life of a mining town is to a great extent determinable in advance.

One company violated its own restrictions as to the use in a certain district of a certain type of house; since then such restrictions as do exist have not been enforced in that particular town. There is reason to believe, however, that violation of the restriction was necessary, as the town did not develop as had been expected. The instance, in fact, is an illustration of the uncertainty of restrictions created and enforced by the grantors of the property and shows the advantage of having such restrictions, if they are to be imposed and serviceable for the life of the community, in the hands of the community collectively. It is but proper that the community should meet the loss arising from past limitations when it becomes necessary for the future prosperity and well-being of the community that the limitations be removed or altered.

RACE SEGREGATION.

A certain amount of race segregation is enforced in a few company towns. One employer declared, "The different nationalities usually prefer to, and as a rule do, live mainly to themselves." The Negroes are segregated in the South, although two company towns in Alabama stated that they made no separation of Negroes and whites. In northern company towns where the Negroes were numerous they were segregated from the other employees. In the southwestern company towns of the copper and gold mining regions Mexicans are segregated in hamlets by themselves. They do not as a rule occupy company houses, but are left to their own devices for shelter. They build their own houses and have their own communities upon company land.

A certain Pennsylvania town in the bituminous region is split up into a certain number of hamlets, Italians living in one section and Slavs in another. One company town in Massachusetts has a group of low-rental houses which are rented only to Poles and other unskilled labor. A steel company in western Pennsylvania alternates the immigrant races with Negro families in order, it states, to prevent too great clannishness among the European immigrants, and a similar arrangement is observed in an iron-mining town in Michigan, where the dif-

ferent European immigrants are alternated for the same purpose. In a certain copper-mining community in Michigan the company's renting agent discriminates in the rental of houses against so-called Russian Finns, whom as a class he does not consider as likely to be loyal to the company. In a neighboring town in the same region the Finns are more or less kept together in the community, and American employees are also grouped together. This grouping was said to have been begun as a result of a serious strike which had occurred within recent years. At that time it was observed that some races influenced others who desired to go to work to stay out on strike.

In three company towns in Pennsylvania and, as stated, in practically all the copper and gold mining towns of the Southwest company houses are rented only to American employees.

Some employers have decided against all forms of restrictions on the ground of the danger of paternalism, a danger made evident by the fate of Pullman, Ill. In one town in question the agent of the Bureau noted the following results:

> Many tenants keep chickens, and some keep cows and horses. In consequence the back yards are untidy. Some of the lots have two houses, one in front and one on the rear of the lot. In some cases the person buying a lot put up a cheap house on the rear of the lot and lived in it for the first few years and then the tenant would put up a better house on the front of the lot and rent the rear house. In a few cases the barn has been converted into a rear house. Business buildings, stores, stables, etc., have been built in the residence district.

PUBLIC UTILITIES.

Public utilities (such as water system, lighting, etc.) are provided by the employing companies themselves in the large majority of cases in the 236 communities studied. And when the agency providing the utility is a private company it is very frequently a subsidiary of the employing company or controlled by the same individuals who control the employing company. No water system other than outside wells or hydrants is provided in 14, or 6.1 per cent, of the 229 communities reporting; no sanitary sewers in 91, or 39.7 per cent; no storm sewers in 116, or 50.7 per cent; no electric lights in 39, or 17 per cent; no gas in 173, or 75.5 per cent; no street paving in 103, or 45 per cent; and no sidewalks or gutters in 43, or 19 per cent, of the communities studied.

There is a lack generally of these public utilities in mining communities. For example, such water system as does exist here goes only so far as the provision of hydrants in the yards of the tenants. Mining towns without a system of electric lighting are, however, very uncommon.

The data summarized above tend to exaggerate the extent to which the utilities named are provided in company towns, as very

frequently they are provided only in a part of the community, usually the better class of houses. Such also is the case as respects the provision of sidewalks and gutters, though it was impossible to ascertain the relative extent to which these prevailed in the community. This survey indicates elsewhere[1] more accurately the extent to which various modern conveniences such as inside water, bath, heating and lighting have been introduced in company houses.

The following table shows the extent to which employers provide certain public utilities within the company town, either for a whole of the community or a part of it.

TABLE 4.—NUMBER AND PER CENT OF COMMUNITIES REPORTING IN WHICH SPECIFIED PUBLIC UTILITIES ARE PROVIDED, BY MANNER IN WHICH PROVIDED.

Public utility.	Number of communities reporting.	Communities in which specified utility is provided by—						No provision made.	
		Company.		Other agency.		Total.		Number.	Per cent.
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		
Water system	229	165	72.1	50	21.8	215	93.9	14	6.1
Sanitary sewers	229	107	46.7	31	13.5	138	60.3	91	39.7
Storm sewers	230	89	38.7	25	10.9	114	49.6	116	50.4
Electric lights	229	148	64.6	42	18.3	190	83.0	39	17.0
Gas	229	12	5.2	44	19.2	56	24.5	173	75.5
Paving	229	94	41.0	32	14.0	126	55.0	103	45.0
Sidewalks	229	166	72.5	20	8.7	186	81.2	43	18.8
Gutters	232	159	68.5	30	12.9	189	81.5	43	18.5

EXERCISE OF PUBLIC FUNCTIONS.

In such matters as fire and police protection, street cleaning and lighting, collection of garbage and the enforcement of sanitary rules, the companies establishing the communities are almost wholly responsible. In over one-half of the communities reporting, street cleaning and lighting, fire protection, garbage collection, and sanitary regulations are functions of the employing company and not of the community. In 85 cases the company also provides the police protection of the community. The number and proportion of communities in which these and other functions named are performed by the company providing the houses are set forth in the table following.

[1] See Tables 11 and 12, pp. 47 and 48.

TABLE 5.—NUMBER AND PER CENT OF COMMUNITIES REPORTING IN WHICH SPECIFIED PUBLIC FUNCTIONS ARE PERFORMED, BY AGENCY.

Public function.	Number of communities reporting.	Communities in which specified public function is performed by—				No provision made.	
		Company.		Town or city.			
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Street cleaning	224	146	65.2	54	24.1	24	10.7
Street lighting	222	132	59.5	60	27.0	30	13.5
Fire protection	224	142	63.4	69	30.8	13	5.8
Police protection	220	85	38.6	118	53.6	17	7.7
Sanitary collection	225	155	68.9	41	18.2	29	12.9
Sanitary regulations	207	116	56.0	35	16.9	56	27.1
Restrictions	202	148	73.3	6	3.0	48	23.8

SCHOOLS, CHURCHES, PLAYGROUNDS, AND HOSPITALS.

In general, employers controlling company towns merely assist in the provision of schools and churches. The interest of some companies, however, in the matter of providing educational facilities is controlling in the community. One company, to cite an example, has built a trade school at a cost of $500,000 and rents it to the State for the nominal sum of $1 a year. The same company has also built a high school costing $100,000, and a $50,000 building for a community art collection. A teachers' home is also provided by the company and rents for $1 a year. The real estate agent of the company stated that there is considerable friction between the townspeople and the company by reason of the latter exercising too much control in local school matters.

Playgrounds and hospitals where found are generally provided at the employer's expense. In over one-third of 205 communities reporting, no playgrounds, and in about two-fifths of the 185 towns reporting, no hospitals were provided. Lack of playgrounds, however, is not so serious, as company towns are usually small, and there are plenty of open spaces.

The principal facts as to the provision of schools, churches, etc., in company towns are set forth in the table below.

TABLE 6.—NUMBER AND PER CENT OF COMMUNITIES REPORTING IN WHICH SPECIFIED PUBLIC AND SEMIPUBLIC INSTITUTIONS ARE PROVIDED, BY MANNER OF PROVISION.

Institution.	Number of communities reporting.	Communities in which institution is provided by—						No provision made.	
		Company.		Assistance by company.		Other agencies.			
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Schools	226	6	2.7	76	33.6	143	63.3	1	0.4
Churches	198	11	5.6	73	36.9	89	44.9	25	12.6
Hospitals	185	72	38.9	16	8.6	25	13.5	72	38.9
Playgrounds	205	110	53.7	7	3.4	16	7.8	72	35.1

CHAPTER IV.—NATURE OF ACCOMMODATIONS PROVIDED.

TYPES OF HOUSES.

It may be well to point out some of the general features of company houses as disclosed by the Bureau's investigation. Of the 53,176 dwellings erected by the companies covered by this study, 25,582, or 48.1 per cent, are detached dwellings; 18,871, or 35.5 per cent, semidetached dwellings; and 6,014, or 11.3 per cent, row dwellings, while all other types combined number only 1,938, or 3.6 per cent of the total. In 1.4 per cent of all cases the type is not reported.

TABLE 7.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED TYPE, BY INDUSTRY AND STATE.

Industry and State.	Detached.		Semidetached.		Row.		Miscellaneous.		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
Bituminous-coal mining:									
Pennsylvania and West Virginia	3,886	33.2	7,388	63.1	429	3.7	8	0.1	11,711
Ohio and Indiana	129	54.9	106	45.1					235
Alabama, Tennessee, and Kentucky	5,177	90.9	521	9.1					5,698
Colorado and Wyoming	1,158	93.8	54	4.4	22	1.8			1,234
Total	10,350	54.8	8,069	42.7	451	2.4	8	(1)	18,878
Anthracite-coal mining	728	12.0	4,923	80.9	438	7.1			[2]6,089
Iron mining:									
Michigan, Wisconsin, and Minnesota	915	84.9	100	9.3			56	5.2	1,071
Alabama	482	92.0	42	8.0					524
Total	1,397	87.6	142	8.9			56	3.5	[3]1,595
Copper mining: Michigan and Tennessee	743	81.8	162	17.8			3	.3	908
Other copper and gold mining: Arizona, New Mexico, and Colorado	349	54.4	90	14.0	192	29.9	11	1.7	642
Iron and steel and allied industries:									
Northern district	1,655	28.9	1,302	22.8	1,865	32.6	900	15.7	5,722
Southern district	457	65.0	246	35.0					703
Total	2,112	32.9	1,548	24.1	1,865	29.0	900	14.0	6,425
Manufacture of explosives	1,254	39.6	170	5.4	1,740	55.0			3,164
Textile manufacture:									
Northern district	101	15.6	194	29.9	208	32.0	146	22.5	649
Southern district	7,425	70.0	2,772	26.1	149	1.4	263	2.5	10,609
Total	7,526	66.9	2,966	26.3	357	3.2	409	3.6	11,258
Miscellaneous industries	1,123	32.6	801	23.2	971	28.2	551	16.0	3,446
Grand total	25,582	48.8	18,871	36.0	6,014	11.5	1,938	3.7	[4]52,405

[1] Less than one-tenth of 1 per cent.
[2] Not including 764 dwellings for which type of construction was not reported.
[3] Not including 7 dwellings for which type of construction was not reported.
[4] Not including 771 dwellings for which type of construction was not reported.

Since 1881 there has been a significant development in the type of buildings erected by employers for their workmen. The prevailing type of house erected before 1881 was the semidetached dwelling; 870,

or 48.3 per cent, of the 1,800 dwellings erected before then were of that type; the row dwelling was the next most common, 423, or 23.5 per cent, being of that type. The proportion of the row type of dwelling erected declined somewhat irregularly from that time to 1915. At the time of this survey this type formed 11.5 per cent of all company dwellings. It is significant that of the 3,547 houses erected by employers in 1916, 1,529, or 43.1 per cent, are of the row type, and of 1,177 erected in 1917, 375, or 31.9 per cent, are of the row type. This increase in row houses in 1916 and 1917 is explained by the fact that the new company developments which were reported as of those years happened to be laid out in large cities where land is high.

TABLE 8.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED TYPE, BY YEAR OF CONSTRUCTION, ALL INDUSTRIES COMBINED.

Year of construction.	Detached.		Semidetached.		Row.		Miscellaneous.		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
Before 1881	357	19.8	870	48.3	423	23.5	150	8.3	1,800
1881–1890	1,080	55.4	673	34.5	155	7.9	42	2.2	1,950
1891–1900	2,543	54.0	1,811	38.5	328	7.0	26	.6	4,708
1901–1905	3,431	47.4	2,763	38.4	955	13.2	79	1.1	7,228
1906–1910	3,912	55.1	1,825	25.7	814	11.5	544	7.7	7,095
1911	421	41.1	204	19.9	112	10.9	288	28.1	1,025
1912	435	87.2	52	10.4			12	2.4	499
1913	652	48.2	404	29.9	297	22.0			1,353
1914	880	40.6	1,176	54.2	114	5.3			2,170
1915	1,499	60.6	534	21.6	132	5.3	310	12.5	2,475
1916	1,088	30.7	830	23.4	1,529	43.1	100	2.8	3,547
1917	587	49.9	204	17.3	375	31.9	11	.9	1,177
Not reported	8,697	48.1	7,525	41.6	780	4.3	376	2.1	17,378
Total	25,582	48.8	18,871	36.0	6,014	11.5	1,938	3.7	[1] 52,405

[1] Not including 771 dwellings for which type of construction was not reported.

SIZE OF DWELLINGS.

The largest proportion of the company houses—15,672 dwellings, or 30.4 per cent of the 51,473 for which data as to number of rooms were secured—have four rooms. A little over one-sixth (9,413) of the houses have five rooms; and approximately an equal proportion (9,127) six rooms. That is, about two-thirds of all these houses are four, five, and six room dwellings. There are 160 one-room dwellings, but this is less than 1 per cent of the total.

Considerable variation exists as between the different industry groups and the different sections of the country. The prevailing size of dwelling for a family in the Pennsylvania and West Virginia bituminous-coal region is either three or four rooms; in the Ohio and Indiana coal regions, four rooms; in Alabama, Tennessee, and Kentucky, three or four rooms; and in the coal towns of Colorado and Wyoming, four rooms. In the anthracite-coal region the typical company house is of five or six rooms.

Houses in the southern company towns are generally smaller than those in the northern towns. Porches, however, are more commonly used in the South than in the North for sleeping purposes. In the iron-mining region of the Northwest, including Michigan, Minnesota, and Wisconsin, the common type is that of five rooms. In the iron-mining district of Alabama the prevailing type is of two or three rooms. In the iron and steel industries of the central and eastern States there is a uniform distribution of four, five, and six room houses, while in the southern towns three-fourths are two-room houses. A similar contrast exists between the size of houses in the textile-mill towns of the northern and southern districts. In the former five, six, and seven room houses prevail and in the latter three and four room houses.

In each industry group the district having the largest proportion of two-room dwellings is as follows: The bituminous-coal region of Alabama, Tennessee, and Kentucky (18 per cent); the iron-mining region of Alabama (35.5 per cent); the copper and gold mining region of Arizona, New Mexico, and Colorado (30.5 per cent); and the southern iron and steel and cotton-mill districts (75.1 and 8.9 per cent, respectively).

The following table shows the distribution of company dwellings by number of rooms, according to the several industry groups:

TABLE 9.—NUMBER AND PER CENT OF DWELLINGS HAVING EACH SPECIFIED NUMBER OF ROOMS PER DWELLING, BY INDUSTRY AND STATE.

NUMBER.

Industry and State.	Dwellings having—									Total.
	1 room	2 rooms	3 rooms	4 rooms	5 rooms	6 rooms	7 rooms	8 rooms	9 rooms and over.	
Bituminous-coal mining:										
Pennsylvania and West Virginia		801	3,358	2,969	2,566	1,768	118	112	19	11,711
Ohio and Indiana			30	184	14	7				235
Alabama, Tennessee, and Kentucky		1,027	1,650	2,291	446	221	19	28	16	5,698
Colorado and Wyoming		51	217	794	69	96	6	1		1,234
Total		1,879	5,255	6,238	3,095	2,092	143	141	35	18,878
Anthracite-coal mining		37	247	920	1,604	1,724	479	237	72	5,320
Iron mining:										
Michigan, Wisconsin, and Minnesota			7	223	415	196	92	104	34	1,071
Alabama	3	128	125	81	12	11	1			361
Total	3	128	132	304	427	207	93	104	34	1,432
Copper mining: Michigan and Tennessee		4	9	262	317	143	26	134	13	908
Other copper and gold mining: Arizona, New Mexico, and Colorado	109	196	118	171	35	13				642
Iron and steel and allied industries:										
Northern district		274	125	1,547	1,442	1,629	245	239	221	5,722
Southern district		528	64	27	45	30	1	4	4	703
Total		802	189	1,574	1,487	1,659	246	243	225	6,425
Manufacture of explosives	48	120	161	674	462	1,455	238	3	3	3,164

TABLE 9.—NUMBER AND PER CENT OF DWELLINGS HAVING EACH SEPARATE NUMBER OF ROOMS PER DWELLING, BY INDUSTRY AND STATE—Continued.

NUMBER.

Industry and State.	Dwellings having—									Total.
	1 room	2 rooms	3 rooms	4 rooms	5 rooms	6 rooms	7 rooms	8 rooms	9 rooms and over.	
Textile manufacture:										
Northern district			12	55	155	209	108	20	90	649
Southern district		941	3,165	4,585	985	796	63	42	32	10,609
Total		941	3,177	4,640	1,140	1,005	171	62	122	11,258
Miscellaneous industries		6	177	889	846	829	404	258	37	3,446
Grand total	160	4,113	9,465	15,672	9,413	9,127	1,800	1,182	541	[1] 51,473

PER CENT.

Bituminous-coal mining:										
Pennsylvania and West Virginia		6.8	28.7	25.4	21.9	15.1	1.0	1.0	0.2	100.0
Ohio and Indiana			12.8	78.3	6.0	3.0				100.0
Alabama, Tennessee, and Kentucky		18.0	29.0	40.2	7.8	3.9	.3	.5	.3	100.0
Colorado and Wyoming		4.1	17.6	64.3	5.6	7.8	.5	.1		100.0
Total		10.0	27.8	33.0	16.4	11.1	.8	.7	.2	100.0
Anthracite-coal mining		.7	4.6	17.3	30.2	32.4	9.0	4.4	1.4	100.0
Iron mining:										
Michigan, Wisconsin, and Minnesota			.7	20.8	38.7	18.3	8.6	9.7	3.2	100.0
Alabama	0.8	35.5	34.6	22.4	3.3	3.0	.3			100.0
Total	.2	8.9	9.2	21.2	29.9	14.4	6.5	7.3	2.4	100.0
Copper mining: Michigan and Tennessee		.4	1.0	28.9	34.9	15.7	2.9	14.8	1.4	100.0
Other copper and gold mining: Arizona, New Mexico, and Colorado	17.0	30.5	18.4	26.6	5.5	2.0				100.0
Iron and steel and allied industries:										
Northern district		4.8	2.2	27.0	25.2	28.5	4.3	4.2	3.9	100.0
Southern district		75.1	9.1	3.8	6.4	4.3	.1	.6	.6	100.0
Total		12.5	2.9	24.5	23.1	25.8	3.8	3.8	3.5	100.0
Manufacture of explosives	1.5	3.8	5.1	21.3	14.6	46.0	7.5	.1	.1	100.0
Textile manufacture:										
Northern district			1.8	8.5	23.9	32.2	16.6	3.1	13.9	100.0
Southern district		8.9	29.8	43.2	9.3	7.5	.6	.4	.3	100.0
Total		8.4	28.2	41.2	10.1	8.9	1.5	.6	1.1	100.0
Miscellaneous industries		.2	5.1	25.8	24.6	24.1	11.7	7.5	1.1	100.0
Grand total	.3	8.0	18.4	30.4	18.3	17.7	3.5	2.3	1.1	100.0

[1] Not including 1,703 dwellings for which number of rooms was not reported.

MATERIAL OF CONSTRUCTION.

The frame structure is the most prevalent style of company house, with brick less than a tenth as prevalent, and all other types of material combined even less prevalent than brick.

TABLE 10.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED MATERIAL OF CONSTRUCTION, BY INDUSTRY AND STATE.

Industry and State.	Frame.		Brick.		Other.		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
Bituminous-coal mining:							
Pennsylvania and West Virginia	11,101	94.8	331	2.8	279	2.4	11,711
Ohio, Indiana, and Illinois	235	100.0					235
Alabama, Tennessee, and Kentucky	5,698	100.0					5,698
Colorado and Wyoming	968	78.4			266	21.6	1,234
Total	18,002	95.4	331	1.8	545	2.8	18,878
Anthracite-coal mining	6,708	97.9	43	.6	102	1.5	6,853
Iron mining:							
Michigan, Wisconsin, and Minnesota	1,071	99.4					[1] 1,071
Alabama	524	100.0					524
Total	1,595	99.6					[1] 1,595
Copper mining: Michigan and Tennessee	902	99.3	3	.3	3	.3	908
Other copper and gold mining: Arizona, New Mexico, and Colorado	393	61.2	20	3.1	229	35.7	642
Textile manufacture:							
Northern district	402	61.9	213	32.8	34	5.2	649
Southern district	10,287	97.0	293	2.8	29	.3	10,609
Total	10,689	94.9	506	4.5	63	.6	11,258
Iron and steel and allied industries:							
Northern district	3,290	57.5	1,310	22.9	1,122	19.6	5,722
Southern district	668	95.0	35	5.0			703
Total	3,958	61.6	1,345	20.9	1,122	17.5	6,425
Manufacture of explosives	3,163	100.0	1	[2]			3,164
Miscellaneous industries	2,363	68.6	970	28.1	113	3.3	3,446
Grand total	47,773	89.8	3,219	6.1	2,177	4.1	[1] 53,169

[1] Not including 7 dwellings for which the material of construction was not reported.
[2] Less than one-tenth of 1 per cent.

PROVISION OF SANITARY SYSTEMS.

An indication of the extent of modern conveniences in company houses may be obtained from the following table showing data for about 230 communities. This table shows that 18,331, or 38.5 per cent, of the 47,580 dwellings for which reports were obtained had inside water. The sanitary conveniences in these dwellings ranged from a complete three-piece bathroom and modern kitchen plumbing to merely a bibb or faucet in the kitchen. On the other hand, 29,249, or 61.5 per cent, of the dwellings reported had no inside water and sanitary conveniences.

TABLE 11.—NUMBER AND PER CENT OF DWELLINGS HAVING SPECIFIED SANITARY EQUIPMENT, BY INDUSTRY AND STATE.

NUMBER.

Industry and State.	Bath, water-closet, sewer or cesspool, water system, and gas or electric light.	Bath, water-closet, sewer or cesspool, and water system.	Water-closet, sewer or cesspool, running water inside, and gas or electric light.	Water-closet, sewer or cesspool, and running water inside.	Gas or electric light and running water inside.	Running water inside, bath, and gas or electric light.	No modern conveniences except gas or electric light.	No modern conveniences except running water inside.	No modern conveniences (outside privies).	Total number reporting.
Bituminous-coal mining:										
Pennsylvania and West Virginia	[1] 242	12			289	[2] 5	4,314	215	5,042	10,119
Ohio and Indiana	3						76		156	235
Alabama, Tennessee, and Kentucky	53	1		1	58	[3] 7	1,189	148	3,871	5,328
Colorado and Wyoming					6	58	1,121		29	1,214
Total	298	13		1	353	70	6,700	363	9,098	16,896
Anthracite-coal mining	[4] 234	21	170	360	418	[4] 62	16	940	1,813	4,034
Iron mining:										
Michigan, Wisconsin, and Minnesota	73			96	142		538	95	113	1,057
Alabama	19		1		10	8	6	33	447	524
Total	92		1	96	152	8	544	128	560	1,581
Copper mining: Michigan and Tennessee	76	32	54	134			[5] 57	250	[6] 305	908
Other copper and gold mining: Arizona, Colorado, and New Mexico	284		5		127	8	97		121	642
Iron and steel and allied industries:										
Northern district	2,259	274	507	652	55	[7] 31	62	472	1,410	5,722
Southern district	31	2	8		5		428	1	222	697
Total	2,290	276	515	652	60	31	490	473	1,632	6,419
Manufacture of explosives	2,762		66		8		144		184	3,164
Textile manufacture:										
Northern district	242	9	188	56				129	19	643
Southern district	391	5	797	648	344		2,546	249	4,912	9,892
Total	633	14	985	704	344		2,546	378	4,931	10,535
Miscellaneous industries	1,569	503	121	557	548	1	6	61	5	3,401
Grand total	8,238	859	1,917	2,534	2,010	180	10,600	2,593	18,649	[8] 47,580

[1] Fifteen have "Kaustine" privies.
[2] Four have shower baths; 1 has no gas or electric lights.
[3] One has shower bath and no gas or electric lights.
[4] Forty have combination bath and laundry tub in kitchen.
[5] Three have pumps inside house.
[6] One hundred and seventy-three have pumps inside house.
[7] Twenty-nine of these have no gas or electric lights.
[8] Not including 5,596 dwellings for which data have not been reported.

TABLE 11.—NUMBER AND PER CENT OF DWELLINGS HAVING SPECIFIED SANITARY EQUIPMENT, BY INDUSTRY AND STATE—Concluded.

PER CENT.

Industry and State.	Bath, water-closet, sewer or cesspool, water system, and gas or electric light.	Bath, water-closet, sewer or cesspool, and water system.	Water-closet, sewer or cesspool, running water inside, and gas or electric light.	Water-closet, sewer or cesspool, and running water inside.	Gas or electric light and running water inside.	Running water inside, bath, and gas or electric light.	No modern conveniences except gas or electric light.	No modern conveniences except running water inside.	No modern conveniences (outside privies).	Total number reporting.
Bituminous-coal mining:										
Pennsylvania and West Virginia	2.4	0.1			2.9	(1)	42.6	2.1	49.8	100.0
Ohio and Indiana	1.3						32.3		66.4	100.0
Alabama, Tennessee, and Kentucky	1.0	(1)		(1)	1.1	0.1	22.3	2.8	72.7	100.0
Colorado and Wyoming					.5	4.8	92.5		2.4	100.0
Total	1.8	.1		(1)	2.1	.4	39.7	2.1	53.8	100.0
Anthracite-coal mining	5.8	.5	4.2	8.9	10.4	1.5	.4	23.3	44.9	100.0
Iron mining:										
Michigan, Wisconsin, and Minnesota	6.9			9.1	13.4		50.9	9.0	10.7	100.0
Alabama	3.6		.2		1.9	1.5	1.1	6.3	85.3	100.0
Total	5.8		.1	6.0	9.6	.5	34.4	8.1	35.4	100.0
Copper mining: Michigan and Tennessee	8.4	3.5	5.9	14.8			6.3	27.5	33.6	100.0
Other copper and gold mining: Arizona, Colorado, and New Mexico	44.2		.8		19.8	1.2	15.1		18.8	100.0
Iron and steel manufacture:										
Northern district	39.5	4.8	8.9	11.4	1.0	.5	1.1	8.2	24.6	100.0
Southern district	4.4	.3	1.1		.7		61.4	.1	31.9	100.0
Total	35.7	4.3	8.0	10.2	.9	.5	7.6	7.4	25.4	100.0
Manufacture of explosives	87.3		2.1		.3		.6		5.8	100.0
Textile manufacture:										
Northern district	37.6	1.4	29.2	8.7				20.1	3.0	100.0
Southern district	3.9	.1	8.1	6.6	3.5		25.7	2.5	49.7	100.0
Total	6.0	.1	9.3	6.7	3.3		24.2	3.6	46.8	100.0
Miscellaneous industries	46.1	14.8	3.6	17.3	16.1	(1)	.2	1.8	.1	100.0
Grand total	17.3	1.8	4.0	5.3	4.2	.4	22.3	5.4	39.2	100.0

[1] Less than one-tenth of 1 per cent.

Smallness and isolation of the community is the determining factor in limiting the extent to which modern sanitary conveniences have been provided. The type of wage earner to be housed also is a large factor. Sanitary conveniences are most rarely found in mining towns, both North and South, and in the mill towns of the South. Thus in the soft-coal regions only 312 dwellings, or 1.9 per cent of the 16,896 reported, have inside toilets, while 16,584, or 98.1 per cent, have outside toilets. In the more thickly settled anthracite region 19.5 per cent have inside toilets and 80.5 per cent outside. In the northern iron-mining regions 84 per cent have outside toilets, and in the

Alabama or southern district 96.2 per cent. For the northern and southern textile regions the effect of relative isolation is equally apparent. In the northern district 23.0 per cent have outside toilets and in the southern 81.4 per cent. For certain communities engaged in miscellaneous industries near larger centers of population and industry, and where a better paid class of workmen are housed, only 18.3 per cent of the company dwellings are dependent on outside toilets, while in communities engaged in the manufacture of explosives the proportion is only 10.6 per cent. More detailed figures for the various regions are shown in the table which follows:

TABLE 12.—NUMBER AND PER CENT OF COMPANY DWELLINGS HAVING INSIDE OR OUTSIDE TOILETS, BY INDUSTRY AND STATE.

Industry and State.	Total.	Inside toilets.		Outside toilets.	
		Number.	Per cent.	Number.	Per cent.
Bituminous-coal mining:					
Pennsylvania and West Virginia	10,119	254	2.5	9,865	97.5
Ohio and Indiana	235	3	1.3	232	98.7
Alabama, Tennessee, and Kentucky	5,328	55	1.0	5,273	99.0
Colorado and Wyoming	1,214			1,214	100.0
Total	16,896	312	1.9	16,584	98.1
Anthracite-coal mining	4,034	785	19.5	3,249	80.5
Iron mining:					
Michigan, Wisconsin, and Minnesota	1,057	169	16.0	888	84.0
Alabama	524	20	3.8	504	96.2
Total	1,581	189	12.0	1,392	88.0
Copper mining: Michigan and Tennessee	908	296	32.6	612	67.4
Other copper and gold mining: Arizona, Colorado, and New Mexico	642	289	45.0	353	55.0
Iron and steel and allied industries:					
Northern district	5,722	3,692	64.5	2,030	35.5
Southern district	697	41	5.9	656	94.1
Total	6,419	3,733	58.1	2,686	41.9
Manufacture of explosives	3,164	2,828	89.4	336	10.6
Textile manufacture:					
Northern district	643	495	77.0	148	23.0
Southern district	9,892	1,841	18.6	8,051	81.4
Total	10,535	2,336	22.2	8,199	77.8
Miscellaneous industries	3,401	2,780	81.7	621	18.3
Grand total	47,580	13,548	28.5	34,032	71.5

RENTS.

The rents of company houses appear reasonable. There is no evidence of any attempt to overcharge tenants. It is quite conservative to say that over two-thirds of all company houses are well within the means of the low-paid unskilled laborer, for 69 per cent of the total number of dwellings reported rent for less than $8 per month. While no study has been made of the actual relation between wages and rent, two employers report that they limit rent to a definite percentage of wages—namely, 25 per cent in one case and 10 per cent in the other. Assuming either of these ratios to be the correct one, the estimate that two-thirds of all company houses are within the means of the low-paid workers is not exaggerated. It presupposes, on the basis of the higher ratio, earnings of about $32 a month.

The number of dwellings of each specified number of rooms at each classified amount of rent per month are shown in the following two tables:

TABLE 13.—NUMBER OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS AT CLASSIFIED AMOUNT OF RENT PER MONTH—ALL INDUSTRIES COMBINED.

Classified amount of rent per month.	Number of dwellings having—										Total.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	Rooms not reported.	
Under $3	3	1,186	1,143	847	234	25	57	1	1	31	3,528
$3 and under $4	48	923	2,066	1,105	576	204	65	2	1	138	5,128
$4 and under $5		887	706	3,305	810	488	77	13	7	355	6,648
$5 and under $6	13	534	1,416	1,714	1,428	783	114	19	7	294	6,322
$6 and under $7		494	1,321	3,274	1,137	1,440	115	81	29	270	8,161
$7 and under $8		7	141	3,220	1,735	1,007	194	130	49	228	6,711
$8 and under $9		57	530	1,985	939	1,458	220	217	40	256	5,702
$9 and under $10		16	34	774	460	403	29	108	13	46	1,883
$10 and under $11	96	1	23	611	930	1,217	128	184	58	39	3,287
$11 and under $12			13	28	65	280	49	4	3		442
$12 and under $14			66	188	238	722	226	203	24	13	1,680
$14 and under $16		5	9	31	301	226	117	126	42	15	872
$16 and under $18			9	254	104	272	73	58	84	4	858
$18 and over			16	276	447	538	221	182	177	5	1,862
Rent not reported		3	4	31	3	34	1	2	5	9	92
Total	160	4,113	7,497	17,643	9,407	9,097	1,686	1,330	540	1,703	53,176

TABLE 14.—NUMBER AND CUMULATIVE PER CENT OF DWELLINGS OF SPECIFIED NUMBER OF ROOMS RENTING UNDER CERTAIN SPECIFIED AMOUNTS PER MONTH—ALL INDUSTRIES COMBINED.

NUMBER.

Rent per month.	Dwellings having—										Total.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	Rooms not reported.	
Under $3	3	1,186	1,143	847	234	25	57	1	1	31	3,528
Under $4	51	2,109	3,209	1,952	810	229	122	3	2	169	8,656
Under $5	51	2,996	3,915	5,257	1,620	717	199	16	9	524	15,304
Under $6	64	3,530	5,331	6,971	3,048	1,500	313	35	16	818	21,626
Under $7	64	4,024	6,652	10,245	4,185	2,940	428	116	45	1,088	29,787
Under $8	64	4,031	6,793	13,465	5,920	3,947	622	246	94	1,316	36,498
Under $9	64	4,088	7,323	15,450	6,859	5,405	842	463	134	1,572	42,200
Under $10	64	4,104	7,357	16,224	7,319	5,808	871	571	147	1,618	44,083
Under $11	160	4,105	7,380	16,835	8,249	7,025	999	755	205	1,657	47,370
Under $12		4,105	7,393	16,863	8,314	7,305	1,048	759	208	1,657	47,812
Under $14		4,105	7,459	17,051	8,552	8,027	1,274	962	232	1,670	49,492
Under $16		4,110	7,468	17,082	8,853	8,253	1,391	1,088	274	1,685	50,364
Under $18		4,110	7,477	17,336	8,957	8,525	1,464	1,146	358	1,689	51,222
$18 and over			16	276	447	538	221	182	177	5	1,862
Not reported		3	4	31	3	34	1	2	5	9	92
Total	160	4,113	7,497	17,643	9,407	9,097	1,686	1,330	540	1,703	53,176

PER CENT.

Under $3	1.9	28.8	15.2	4.8	2.5	0.3	3.4	0.1	0.2	1.8	6.6
Under $4	31.9	51.3	42.8	11.1	8.6	2.5	7.2	.2	.4	9.9	16.3
Under $5	31.9	72.8	52.2	29.8	17.2	7.9	11.8	1.2	1.7	30.8	28.8
Under $6	40.0	85.8	71.1	39.5	32.4	16.5	18.6	2.6	3.0	48.0	40.7
Under $7	40.0	97.8	88.7	58.1	44.5	32.3	25.4	8.7	8.3	63.9	56.0
Under $8	40.0	98.0	90.6	76.3	62.9	43.4	36.9	18.5	17.4	77.3	68.6
Under $9	40.0	99.4	97.7	87.6	72.9	59.4	49.9	34.8	24.8	92.3	79.4
Under $10	40.0	99.8	98.1	92.0	77.8	63.8	51.7	42.9	27.2	95.0	82.9
Under $11	100.0	99.8	98.4	95.4	87.7	77.2	59.3	56.8	38.0	97.3	89.1
Under $12		99.8	98.6	95.6	88.4	80.3	62.2	57.1	38.5	97.3	89.9
Under $14		99.8	99.5	96.6	90.9	88.2	75.6	72.3	43.0	98.1	93.1
Under $16		99.9	99.6	96.8	94.1	90.7	82.5	81.8	50.7	98.9	94.7
Under $18		99.9	99.7	98.3	95.2	93.7	86.8	86.2	66.3	99.2	96.3
$18 and over			.2	1.6	4.8	5.9	13.1	13.7	32.8	.3	3.5
Not reported		.1	.1	.2	(1)	.4	.1	.2	.9	.5	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 per cent.

In Table 15 are shown, by industry groups, the number and per cent of dwellings renting for each classified amount per month.

TABLE 15.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY AND STATE.

NUMBER.

Industry and State.	Dwellings renting at each classified amount per month.														Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Bituminous-coal mining:															
Pennsylvania and West Virginia	4	137	352	1,203	2,041	3,370	2,576	752	824	111	145	102	73	20	11,710
Ohio and Indiana					10		114	46	56		6		3		235
Alabama, Tennessee, and Kentucky	261	661	762	908	1,652	660	352	184	162	2	69	17	3	5	5,698
Colorado and Wyoming	22		12	66	158	64	647	10	120	2	116	14	3		1,234
Total	287	798	1,126	2,177	3,861	4,094	3,689	992	1,162	115	336	133	82	25	18,877
Anthracite-coal mining	344	905	1,176	1,310	1,265	745	513	158	177	17	116	42	32	27	6,827
Iron mining:															
Michigan, Wisconsin, and Minnesota		29	70	208	182	123	169	35	228	3	7	16	1	6	1,077
Alabama	117	119	78	141	44	12	3	2	8						524
Total	117	148	148	349	226	135	172	37	236	3	7	16	1	6	1,601
Copper mining: Michigan and Tennessee	4	30	9	275	203	148	74	67	34		13	17	24	6	904
Other copper and gold mining: Arizona, New Mexico, and Colorado				70	105		66	53	109	14	52	32	24	87	612
Iron and steel and allied industries:															
Northern district	2	35	450	347	940	300	518	276	477	209	546	296	507	819	5,722
Southern district		58	407	64	59	4	56		9		32	7	1	6	703
Total	2	93	857	411	999	304	574	276	486	209	578	303	508	825	6,425
Manufacture of explosives		144		514	468	461	306	36	739	11	204	116	24	141	3,164

TABLE 15.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY AND STATE—Concluded.

NUMBER.

Industry and State.	Dwellings renting at each classified amount per month.														Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Textile industries:															
Northern district	102	1	49	102	52	69	37	11	74	12	59	13	53	14	648
Southern district	2,655	2,970	2,893	954	711	145	89	64	69	15	20	1	18	5	10,609
Total	2,757	2,971	2,942	1,056	763	214	126	75	143	27	79	14	71	19	11,257
Miscellaneous industries	17	39	390	160	271	610	182	189	201	46	295	199	92	726	3,417
Grand total	3,528	5,128	6,648	6,322	8,161	6,711	5,702	1,883	3,287	442	1,680	872	858	1,862	[1] 53,084

PER CENT.

Bituminous-coal mining:															
Pennsylvania and West Virginia	([2])	1.2	3.0	10.3	17.4	28.8	22.0	6.4	7.0	0.9	1.2	0.9	0.6	0.2	100.0
Ohio and Indiana					4.3		48.5	19.6	23.8		2.6		1.3		100.0
Alabama, Tennessee, and Kentucky	4.6	11.6	13.4	15.9	29.0	11.6	6.2	3.2	2.8	([2])	1.2	.3	.1	.1	100.0
Colorado and Wyoming	1.8		1.0	5.3	12.8	5.2	52.4	.8	9.7	.2	9.4	1.1	.2		100.0
Total	1.5	4.2	6.0	11.5	20.5	21.7	19.5	5.3	6.2	.6	1.8	.7	.4	.1	100.0
Anthracite-coal mining	5.0	13.2	17.2	19.1	18.5	10.9	7.5	2.3	2.6	.2	1.7	.6	.5	.4	100.0
Iron mining:															
Michigan, Wisconsin, and Minnesota		2.7	6.5	19.3	16.9	11.4	15.7	3.2	21.2	.3	.6	1.5	.1	.6	100.0
Alabama	22.3	22.7	14.9	26.9	8.4	2.3	.6	.4	1.5						100.0
Total	7.3	9.2	9.2	21.8	14.1	8.4	10.7	2.3	14.7	.2	.4	1.0	.1	.4	100.0
Copper mining: Michigan and Tennessee	.4	3.3	1.0	30.4	22.5	16.4	8.2	7.4	3.8		1.4	1.9	2.7	.7	100.0
Other copper and gold mining: Arizona, New Mexico, and Colorado				11.4	17.2		10.8	8.7	17.8	2.3	8.5	5.2	3.9	14.2	100.0

Iron and steel and allied industries:															
Northern district	(2)	.6	7.9	6.1	16.4	5.2	9.1	4.8	8.3	3.7	9.5	5.2	8.9	14.3	100.0
Southern district		8.3	57.9	9.1	8.4	.6	8.0		1.3		4.6	1.0	.1	.9	100.0
Total	(2)	1.4	13.3	6.4	15.5	4.7	8.9	4.3	7.6	3.3	9.0	4.7	7.9	12.8	100.0
Manufacture of explosives		4.6		16.2	14.8	14.6	9.7	1.1	23.4	.3	6.4	3.7	.8	4.5	100.0
Textile industries:															
Northern district	15.7	.2	7.6	15.7	8.0	10.6	5.7	1.7	11.4	1.9	9.1	2.0	8.2	2.2	100.0
Southern district	25.0	28.0	27.3	9.0	6.7	1.4	.8	.6	.7	.1	.2	(2)	.2	(2)	100.0
Total	24.5	26.4	26.1	9.4	6.8	1.9	1.1	.7	1.3	.2	.7	.1	.6	.2	100.0
Miscellaneous industries	.5	1.1	11.4	4.7	7.9	17.9	5.3	5.5	5.9	1.4	8.7	5.8	2.7	21.2	100.0
Grand total	6.6	9.7	12.5	11.9	15.4	12.6	10.7	3.5	6.2	.8	3.2	1.6	1.6	3.5	100.0

[1] Not including 92 dwellings for which amount of rent was not reported.

[2] Less than one-tenth of 1 per cent.

In Table 16 the data contained in Table 15 are arranged to show cumulatively the number and per cent of dwellings renting for each classified amount per month.

TABLE 16.—NUMBER AND CUMULATIVE PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY AND STATE.

NUMBER.

Industry and State.	Dwellings renting at each classified amount per month.													Total.	
	Under $3.	Under $4.	Under $5.	Under $6.	Under $7.	Under $8.	Under $9.	Under $10.	Under $11.	Under $12.	Under $14.	Under $16.	Under $18.	$18 and over.	
Bituminous-coal mining:															
Pennsylvania and West Virginia	4	141	493	1,696	3,737	7,107	9,683	10,435	11,259	11,370	11,515	11,617	11,690	20	11,710
Ohio and Indiana					10	10	124	170	226	226	232	232	235		235
Alabama, Tennessee, and Kentucky	261	922	1,684	2,592	4,244	4,904	5,256	5,440	5,602	5,604	5,673	5,690	5,693	5	5,698
Colorado and Wyoming	22	22	34	100	258	322	969	979	1,099	1,101	1,217	1,231	1,234		1,234
Total	287	1,085	2,211	4,388	8,249	12,343	16,032	17,024	18,186	18,301	18,637	18,770	18,852	25	18,877
Anthracite-coal mining	344	1,249	2,425	3,735	5,000	5,745	6,258	6,416	6,593	6,610	6,726	6,768	6,800	27	6,827
Iron mining:															
Michigan, Wisconsin, and Minnesota		29	99	307	489	612	781	816	1,044	1,047	1,054	1,070	1,071	6	1,077
Alabama	117	236	314	455	499	511	514	516	524	524	524	524	524		524
Total	117	265	413	762	988	1,123	1,295	1,332	1,568	1,571	1,578	1,594	1,595	6	1,601
Copper mining: Michigan and Tennessee	4	34	43	318	521	669	743	810	844	844	857	874	898	6	904
Other copper and gold mining: Arizona, New Mexico, and Colorado				70	175	175	241	294	403	417	469	501	525	87	612
Iron and steel and allied industries:															
Northern district	2	37	487	834	1,774	2,074	2,592	2,868	3,345	3,554	4,100	4,396	4,903	819	5,722
Southern district		58	465	529	588	592	648	648	657	657	689	696	697	6	703
Total	2	95	952	1,363	2,362	2,666	3,240	3,516	4,002	4,211	4,789	5,092	5,600	825	6,425
Manufacture of explosives		144	144	658	1,126	1,587	1,893	1,929	2,668	2,679	2,883	2,999	3,023	141	3,164
Textile industries:															
Northern district	102	103	152	254	306	375	412	423	497	509	568	581	634	14	648
Southern district	2,655	5,625	8,518	9,472	10,183	10,328	10,417	10,481	10,550	10,565	10,585	10,586	10,604	5	10,609
Total	2,757	5,728	8,670	9,726	10,489	10,703	10,829	10,904	11,047	11,074	11,153	11,167	11,238	19	11,257
Miscellaneous industries	17	56	446	606	877	1,487	1,669	1,858	2,059	2,105	2,400	2,599	2,691	726	3,417
Grand total	3,528	8,656	15,304	21,626	29,787	36,498	42,200	44,083	47,370	47,812	49,492	50,364	51,222	1,862	[1] 53,084

PER CENT.

Bituminous-coal mining:															
Pennsylvania and West Virginia	(2)	1.2	4.2	14.5	31.9	60.7	82.7	89.1	96.1	97.1	98.3	99.2	99.8	0.2	100.0
Ohio and Indiana					4.3		52.8	72.3	96.2		98.7		100.0		100.0
Alabama, Tennessee, and Kentucky	4.6	16.2	29.6	45.5	74.5	86.1	92.2	95.5	98.3	98.4	99.6	99.9	99.9	.1	100.0
Colorado and Wyoming	1.8		2.8	8.1	20.9	26.1	78.5	79.3	89.1	89.2	98.6	99.8	100.0		100.0
Total	1.5	5.7	11.7	23.2	43.7	65.4	84.9	90.2	96.3	96.9	98.7	99.4	99.9	.1	100.0
Anthracite-coal mining	5.0	18.3	35.5	54.7	73.2	84.2	91.7	94.0	96.6	96.8	98.5	99.1	99.6	.4	100.0
Iron mining:															
Michigan, Wisconsin, and Minnesota		2.7	9.2	28.5	45.4	56.8	72.5	75.8	96.9	97.2	97.9	99.4	99.4	.6	100.0
Alabama	22.3	45.0	59.9	86.8	95.2	97.5	98.1	98.5	100.0	100.0	100.0	100.0	100.0		100.0
Total	7.3	16.6	25.8	47.6	61.7	70.1	80.9	83.2	97.9	98.1	98.6	99.6	99.6	.4	100.0
Copper mining: Michigan and Tennessee	.4	3.8	4.8	35.2	57.6	74.0	82.2	89.6	93.4	93.4	94.8	96.7	99.3	.7	100.0
Other copper and gold mining: Arizona, New Mexico, and Colorado				11.4	28.6	28.6	39.4	48.0	65.8	68.1	76.6	81.9	85.8	14.2	100.0
Iron and steel and allied industries:															
Northern district	(2)	.6	8.5	14.6	31.0	36.2	45.3	50.1	58.5	62.1	71.7	76.8	85.7	14.3	100.0
Southern district		8.3	66.1	75.2	83.6	84.2	92.2	92.2	93.5	93.5	98.0	99.0	99.1	.9	100.0
Total	(2)	1.5	14.8	21.2	36.8	41.5	50.4	54.7	62.3	65.5	74.5	79.3	87.2		100.0
Manufacture of explosives		4.6	4.6	20.8	35.6	50.2	59.8	61.0	84.3	84.7	91.1	94.8	95.5	4.5	100.0
Textile industries:															
Northern district	15.7	15.9	23.5	39.2	47.2	57.9	63.6	65.3	76.7	78.5	87.7	89.7	97.8	2.2	100.0
Southern district	25.0	53.0	80.3	89.3	96.0	97.4	98.2	98.8	99.4	99.6	99.8	99.8	99.9	.1	100.0
Total	24.5	50.9	77.0	86.4	93.2	95.1	96.2	96.9	98.1	98.4	99.1	99.2	99.8	.2	100.0
Miscellaneous industries	.5	1.6	13.1	17.7	25.7	43.5	48.8	54.4	60.3	61.6	70.2	76.1	78.8	21.2	100.0
Grand total	6.6	16.3	28.8	40.7	56.1	68.8	79.5	83.0	89.2	90.1	93.2	94.9	96.5	3.5	100.0

[1] Not including 92 dwellings for which rent was not reported.

[2] Less than one-tenth of 1 per cent.

CHAPTER V.—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.[1]

The earliest established mining town in the soft-coal region of Pennsylvania included in the survey dated from 1877, and that of West Virginia from 1885. The earliest houses in this region were built of board and batten, generally not ceiled or plastered inside. (Fig. 21.) Inside running water and other improvements were not known in the earlier days.[2] Often only one well, it was charged before the Industrial Commission of 1900, was sunk for 12 or 14 houses, and only one privy provided for every 3 or 4 houses. The houses were generally of three or four rooms each; a three-room house would rent for $4 a month, and a four-room one for $6, and a five-room one for $8.

Considering the houses for which the data have been reported (8,108 out of 11,711, or 69.2 per cent) the largest number of the houses reported for any period were constructed between the years 1901 and 1905—2,888 out of 8,108, or 35.6 per cent. Five hundred and forty-six, or 6.7 per cent, date from an earlier period, but it is more likely that the largest proportion of the number for which the date of construction has not been reported is also of this earlier period. It was frequently stated by the companies that they did not know the date of construction because the present company had taken the properties over from a former organization and data as respects the houses of the companies had been frequently admittedly defective.

According to date of construction the houses in the bituminous-coal region of Pennsylvania and West Virginia are distributed as follows:

TABLE 17.—NUMBER OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, CLASSIFIED BY YEAR OF CONSTRUCTION—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Year of construction.	Detached.			Semidetached.			Row, frame.	Total.
	Frame.	Brick.	Other.	Frame.	Brick.	Other.		
Before 1881	10							10
1881-1890	16			4				20
1891-1900	32			460	24			516
1901-1905	657	42		2,012		80	97	2,888
1906-1910	784			988		140	221	2,133
1911	12			102				114
1912	146	1		2				149
1913	118			260				378
1914	325			672				997
1915	133			122				255
1916	182		56	410				648
Not reported	1,161	210	1	2,056	54	[b] 2	11	[a] 3,595
Total	3,576	253	57	7,088	78	222	429	[a] 11,703

[a] Not including 8 double-flat frame houses for which year of construction was not reported.
[b] Stone.

[1] This chapter, with slight modification, appeared also in the Monthly Labor Review of the Bureau of Labor Statistics for April, 1920 (pp. 215-222).

[2] United States Industrial Commission, 1900, vol. 12, Washington, 1901, pp. 45, 46, 80, 81, 98, 133, 134.

SCOPE OF SURVEY.

The housing survey of the soft-coal region of Pennsylvania and West Virginia included 32 separate companies operating 114 establishments.[3] In these mines were employed at the time of the survey (1916–17) 78,218 men. The companies housed 43,877 men, or 56.1 per cent of the total employed. The survey covered 11,711 dwellings.

In 20 coal communities in western Pennsylvania, which employed 19,535 men, 13,632, or 69.8 per cent, were housed in the 7,761 dwellings provided. This makes an average of 1.8 employees per dwelling.

Four companies in West Virginia, which employed 13,395 men, housed 4,700, or 35.1 per cent, in the 1,898 dwellings provided, an average of 2.5 employees per dwelling. The number of employees per dwelling, it may be noted, is about 40 per cent greater than that in Pennsylvania. The number per dwelling in the West Virginia mining towns is the same as in the cotton-mill towns of the South.[4]

There is more opportunity for employees to get housing accommodations outside of company houses in the Pennsylvania section than in the West Virginia section, where the towns are more isolated and practically the only accommodation available is that provided in company houses.

TABLE 18.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER OF DWELLINGS AND ROOMS PROVIDED, BY STATE AND COMMUNITY—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

State and community.	Number of employees.	Number housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Pennsylvania:					
Community No. 1	652	652	302	1,447	4.8
Community No. 2	1,250	1,200	336	1,346	4.0
Community No. 3	391	375	166	670	4.0
Community No. 4	275	125	55	223	4.1
Community No. 5	885	314	127	530	4.2
Community No. 6	200	148	124	566	4.6
Community No. 7	3,051	1,500	1,011	5,596	5.5
Community No. 8	235	124	60	240	4.0
Community No. 9	376	300	96	407	4.2
Community No. 10	1,537	1,313	809	4,074	5.0
Community No. 11	997	700	360	2,009	5.6
Community No. 12	780	650	435	1,778	4.1
Community No. 13	675	340	101	540	5.4
Community No. 14	324	240	139	681	4.9
Community No. 15	350	325	154	721	4.7
Community No. 16	298	275	152	651	4.3
Community No. 17	2,348	1,691	701	1,600	2.3
Community No. 18	580	580	291	1,111	3.8
Community No. 19	1,631	1,500	1,165	5,143	4.4
Community No. 20	2,700	1,280	1,177	5,076	4.3
Total	19,535	13,632	7,761	34,409	4.4
West Virginia:					
Community No. 1	1,800	1,800	746	2,883	3.9
Community No. 2	395	300	177	722	4.1
Community No. 3	2,000	2,000	588	2,110	3.6
Community No. 4	9,200	600	387	1,875	4.8
Total	13,395	4,700	1,898	7,590	4.0
Grand total	32,930	18,332	9,659	41,999	

[3] Including 1 company which did not report number of establishments.

[4] See p. 141.

There is possibly a tendency to crowd company houses in this region, although a house-to-house canvass would be required to establish that fact with certainty. However, there may be cited the case of a company in West Virginia which offered a bonus of $1 a month to every family having over three boarders, but stated at the time of the inquiry that this had not been successful. How a family could be expected to accommodate more than three boarders in view of the fact that most of the dwellings contained only four rooms each is not explained.

THE COMPANY TOWN.

The present houses of the miners in this region, like those of the earlier days, are characterized by uniformity in arrangement upon rectangularly laid-out streets, and by uniformity in design and material of construction. The towns of the region have dirt roads, generally no sidewalks, and gutters only rarely. A piped-water system and sanitary sewers are infrequently encountered. The streets are, without exception, of adequate width—about 40 feet on the average—for the infrequent traffic which passes over them. The lots generally afford ample space for gardening, although where the region is excessively rugged space becomes very limited. Trees, lawns, and flowers are conspicuously lacking as beautifying elements. In the coke region of Pennsylvania the large majority of the towns are practically destitute of all such growth; the neighboring hillsides have been burnt bare by the noxious fumes of the coke ovens. In the locations of dwellings and ovens with respect to each other no regard has been had for the direction of the prevailing winds.

As it is difficult, if not impossible, to present a true word picture of the towns in the region, illustrations of two have been included here. (Figs. 15, 16, and 17.)

TYPES OF HOUSES.

The prevailing type of house found in the soft-coal region of Pennsylvania and West Virginia is the semidetached frame house. Dwellings are generally of three or four rooms. Of the 11,711 dwellings reported 7,388, or 63.1 per cent, were of the double or semidetached type; 3,886, or 33.2 per cent, single or detached houses; and 429, or 3.7 per cent, multiple rows. Eight dwellings were of the flat type or other form. Row after row of similar houses, alike even as to color, are placed upon straight streets, giving an impression of distinct monotony.

The exterior of practically all the houses is clapboard or siding. For the ordinary miner's house there is no undersheathing, the clapboard being laid directly on the framing. This does not as a rule make a sufficiently warm house, and the houses are heated almost without exception by a grate or stove.



FIG. 15.—ONE OF THE BETTER-MAINTAINED COAL TOWNS IN WEST VIRGINIA.



FIG. 16.—A SECTION OF A DESOLATE PENNSYLVANIA COKE TOWN OF ROW HOUSES.



FIG. 17.—BETTER SECTION OF THE SAME TOWN.



FIG. 18.—GROUP OF HOUSES IN BITUMINOUS COAL REGION OF PENNSYLVANIA.

Note the placing of houses in rows on hillside and the uniformity of architecture; also, all houses are painted red with white trim. Single houses are placed in one row, double houses in another. The larger outbuilding in the foreground is an outside bathhouse and laundry, but has no modern equipment in it. Each family has 4 rooms in both double and single houses, 2 rooms upstairs and 2 downstairs. Double houses rent for $8 per month for each family; single houses about $8.50.

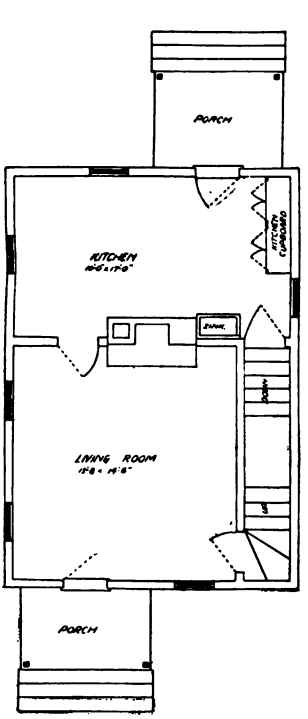


FIG. 19.—FIRST-FLOOR PLANS OF ONE-FAMILY HOUSE.

Four-room house, 2 rooms downstairs and 2 rooms upstairs; cost, in 1914, about $900; rent, $8 to $8.50 per month.

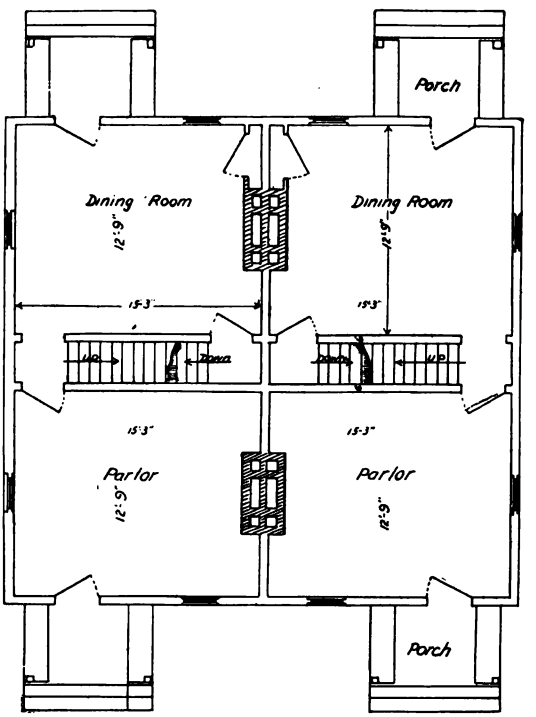


FIG. 20.—FIRST-FLOOR PLAN OF DOUBLE HOUSE.

Four rooms to each family; 2 rooms downstairs and 2 rooms upstairs. Cost per dwelling or renting unit, in 1914, $800; rent per family, $8 per month.



FIG. 21.—AN OLD-STYLE BOARD AND BATTEN 3-ROOM MINER'S COTTAGE STILL IN USE IN AN ISOLATED MINING TOWN OF PENNSYLVANIA.



FIG. 22.—IMPROVED ALLEY IN COAL AND COKE TOWN IN WESTERN PENNSYLVANIA.

Note drainage gutter with garbage receptacles over it.

The houses are generally ceiled inside with tongue-and-groove material, which is usually left unstained, or are plastered. Tenants frequently paper their houses themselves. Few companies plaster and paper anywhere near all their houses, though better-class houses for superintendents and foremen are plastered and papered and are frequently furnace heated or heated by steam from the company plant.

RENT.

The rent of the miner's house in the Pennsylvania and West Virginia region is generally from $1 to $2.50 a month per room. This rent covers the use of the house and water in the case of 27 companies out of the 32 included in the survey of this region. Two companies include light and three include coal as a part of the house rental.

Table 19 shows the number and per cent of dwellings of each specified number of rooms renting for each classified amount of rent per month.

TABLE 19.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

NUMBER.

Classified amount of rent per month.	Dwellings having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Under $3		4							4
$3 and under $4	79	18	31	9					137
$4 and under $5	253	66	8	25					352
$5 and under $6	297	471	424	11					1,203
$6 and under $7	127	447	935	294	238				2,041
$7 and under $8		1,989	118	1,079	170	13		1	3,370
$8 and under $9	45	363	765	558	721	76	47	1	2,576
$9 and under $10			356	150	246				752
$10 and under $11			286	325	186	3	23	1	824
$11 and under $12				25	86				111
$12 and under $14			46		68	14	16	1	145
$14 and under $16				89	7	1	3	2	102
$16 and under $18					46	4	22	1	73
$18 and over						7	1	12	20
Total	801	3,358	2,969	[1] 2,565	1,768	118	112	19	[1] 11,710

PER CENT.

Under $3		0.1							[2]
$3 and under $4	9.9	.5	1.0	0.4					1.2
$4 and under $5	31.6	2.0	.3	1.0					3.0
$5 and under $6	37.1	14.0	14.3	.4					10.3
$6 and under $7	15.8	13.3	31.5	11.5	13.5				17.4
$7 and under $8		59.2	4.0	42.1	9.6	11.0		5.3	28.8
$8 and under $9	5.6	10.8	25.8	21.8	40.8	64.4	42.0	5.3	22.0
$9 and under $10			12.0	5.8	13.9				6.4
$10 and under $11			9.6	12.7	10.5	2.5	20.5	5.3	7.0
$11 and under $12				1.0	4.9				.9
$12 and under $14			1.5		3.8	11.9	14.3	5.3	1.2
$14 and under $16				3.5	.4	.8	2.7	10.5	.9
$16 and under $18					2.6	3.4	19.6	5.3	.6
$18 and over						5.9	.9	63.2	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not including 1 house the rent for which was not reported. [2] Less than one-tenth of 1 per cent.

In Tables 20 and 21 are shown, by size and type of dwelling and material of construction, the classified monthly rentals per dwelling and per room, respectively.

20.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—BITUMINOUS COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.													Total.	
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Detached, frame:															
2 rooms		79	27	15	5		45								171
3 rooms			64	405	12	20	363								864
4 rooms		31	6	83	153	16	262	234	247						1,032
5 rooms		9	25	11	173	234	146	24	121	25		37			805
6 rooms					26	120	191	6	52	16	14	5	42		472
7 rooms						11	76		1		14	1	4	7	114
8 rooms							47		19		16	3	15	1	101
9 rooms							1					1		6	8
10 rooms												1		3	4
12 rooms									1				1		2
14 rooms														1	1
16 rooms														1	1
Total		119	122	514	369	401	1,131	264	441	41	44	48	62	19	3,575
Detached, brick:															
4 rooms							121		1						122
5 rooms								36	45						81
6 rooms											40				40
8 rooms													7		7
10 rooms						1									1
12 rooms											1				1
14 rooms														1	1
Total						1	121	36	46		41		7	1	233
Detached, stone: 5 rooms									1						1
Detached, tile: 6 rooms									50						50
Detached, concrete:															
4 rooms							2								2
6 rooms													4		4
Total							2						4		6

Semidetached, frame:															
2 rooms			187	120	8									315	
3 rooms	4	18	2	54	405									483	
4 rooms			2	260	734	1,969	300	122	30		46			3,463	
5 rooms					121	825	374	90	158			52		1,620	
6 rooms					212	49	530	238	84	70	14	2		1,199	
7 rooms						2			2					4	
8 rooms									4					4	
Total	4	18	191	434	1,480	2,845	1,204	450	278	70	60	54		7,088	
Semidetached, brick:															
4 rooms						2	16							18	
5 rooms						19	38							57	
6 rooms						1		2						3	
Total						22	54	2						78	
Semidetached, tile: 4 rooms				80	12	64	64							220	
Semidetached, stone:															
4 rooms				1										1	
5 rooms						1								1	
Total				1		1								2	
Row, frame:															
2 rooms			39	162	114									315	
3 rooms				12	30									42	
4 rooms					36	36								72	
Total			39	174	180	36								429	
Semidetached, flat, frame: 4 rooms									8					8	
Grand total	4	137	352	1,203	2,041	3,370	2,576	752	824	111	145	102	73	20	[1] 11,710

[1] Not including 1 dwelling for which rent was not reported.

TABLE 21.—NUMBER OF DWELLINGS RENTED AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Type of dwelling and material of construction.	Number of dwellings renting at each classified amount per room.							Total.
	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$4 and under $5.	
Detached:								
Frame	67	974	1,022	745	712	10	45	3,576
Brick	1	1	36	214	1			253
Stone				1				1
Tile			50					50
Concrete				2	4			6
Total	68	975	1,108	962	717	10	45	3,886
Semidetached:								
Frame	4	1,872	3,768	1,186	204	54		7,088
Brick		2	60	16				78
Tile		80	76	64				220
Stone		2						2
Total	4	1,956	3,904	1,266	204	54		7,388
Row, frame			84	69	162	114		429
Semidetached					8			8
Grand total	72	2,931	5,096	2,297	1,091	178	45	[1] 11,710

[1] Not including 1 dwelling for which rent per room was not reported.

MODERN IMPROVEMENTS.

The conveniences supplied in the houses are somewhat limited. Considering only those dwellings for which such data have been reported—10,119 out of 11,711, or 86.4 per cent—242, or 2.4 per cent, are equipped with three-piece bathrooms, water systems, and gas or electric lighting systems; 289, or 2.9 per cent, have running water inside and gas or electric lighting systems; 4,314, or 42.6 per cent, gas or electric lighting only; 215, or 2.1 per cent, running water inside only; and 5,042, or 49.8 per cent, have outside privies only. Of the remaining 17 dwellings, 12 have bath, water-closet, and water system, but no gas or electric lighting system, and 5 have bath, running water, and electric light, but no water-closet. Gas or electric lighting in the houses is fairly general—altogether 4,850 dwellings out of the 10,119 reported, or 47.9 per cent, being so equipped.

COST OF CONSTRUCTION.

The costs of construction of the frame houses in the mining region are roughly comparable, since the size of the houses, the number of rooms, and the substantialness of construction are very similar. However, only the data as respects the frame houses are sufficient, quantitatively, to be of value for comparative purposes.

The data in the following summary table relate to 10,001 frame houses built by coal companies in western Pennsylvania and West Virginia. Of 3,381 single or detached frame houses, 1,987, or 58.8 per cent, cost between $100 and $150 per room, while of 6,620 semidetached dwellings, 2,253, or 34 per cent, cost within those limits. In the higher-cost groups the relative position is reversed, a greater proportion of the double or semidetached houses than of the single or detached houses falling within these groups. This would indicate that on the whole the single cottages cost relatively less than the double or semidetached houses of similar material and construction.

The following is a summary table showing the classified cost per room of detached and semidetached frame dwellings in this region:

TABLE 22.—CLASSIFIED COST PER ROOM OF FRAME DWELLINGS, DETACHED AND SEMIDETACHED—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Type of dwelling.	Dwellings costing each classified amount per room.							Total.
	$50 and under $100.	$100 and under $150.	$150 and under $200.	$200 and under $250.	$250 and under $300.	$300 and under $350.	$350 and over.	
	NUMBER.							
Detached, frame	264	1,987	312	564	62	106	86	3,381
Semidetached, frame	306	2,253	2,572	1,201	288			6,620
Total	570	4,240	2,884	1,765	350	106	86	[1] 10,001
	PER CENT.							
Detached, frame	7.8	58.8	9.2	16.7	1.8	3.1	2.5	100.0
Semidetached, frame	4.6	34.0	38.9	18.1	4.4			100.0
Total	5.7	42.4	28.8	17.6	3.5	1.0	.9	100.0

[1] Not including 663 dwellings for which cost per room was not reported.

Tables 23 and 24 show, by type of dwelling and material of construction, the classified cost of construction per dwelling and per room, respectively.

TABLE 23.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Classified cost per dwelling.	Detached.			Semidetached.			Row, frame.	Total.
	Frame.	Brick.	Other.	Frame.	Brick.	Other.		
Under $250	31			208				239
$250 and under $500	1,170			536			294	2,000
$500 and under $750	1,141			3,646		220	36	5,043
$750 and under $1,000	622		50	1,720	18			[1] 2,410
$1,000 and under $1,250	204	36		426	2			668
$1,250 and under $1,500	107		2	22				131
$1,500 and under $1,750	14	1		60	24			99
$1,750 and under $2,000	30			2	2			34
$2,000 and under $2,250	26	1						27
$2,250 and under $2,500	2							2
$2,500 and under $2,750	15							15
$2,750 and under $3,000	6		4					10
$3,000 and under $3,250	9							9
$3,250 and under $3,500	1							1
$3,500 and under $4,000		6						6
$4,000 and over	3							3
Not reported	195	209	1	468	32	2	99	1,006
Total	3,576	253	57	7,088	78	222	429	[1] 11,703

[1] Not including 8 semidetached flat frame dwellings costing $750 and under $1,000 per dwelling.

TABLE 24.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION PER ROOM, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION— BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Classified cost per room.	Detached.			Semidetached.			Row, frame.	Total.
	Frame.	Brick.	Other.	Frame.	Brick.	Other.		
$50 and under $100	264			306			18	588
$100 and under $150	1,987		50	2,253	1		24	4,315
$150 and under $200	312			2,572	18	220	252	[1] 3,374
$200 and under $250	564	37		1,201	1		36	1,839
$250 and under $300	62			288				350
$300 and under $350	106		2		24			132
$350 and under $400	60	1						61
$400 and under $450	16	6			2			24
$450 and under $500	5		4					9
$500 and under $550	5							5
Not reported	195	209	1	468	32	2	99	1,006
Total	3,576	253	57	7,088	78	222	429	[1] 11,703

[1] Not including 8 semidetached flat frame dwellings costing $150 and under $200 per room.

The relation of rent per room to cost per room is shown in the following table:

TABLE 25.—RELATION OF COST PER ROOM TO RENT PER ROOM—BITUMINOUS-COAL REGION OF PENNSYLVANIA AND WEST VIRGINIA.

Classified cost per room.	Number of dwellings renting at each classified amount per room per month.							Total.
	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$4 and under $5.	
$50 and under $100	11	289	63	223		1		[1] 587
$100 and under $150	53	1,979	1,412	239	632			4,315
$150 and under $200	4	565	1,833	646	171	163		3,382
$200 and under $250	1	26	1,010	657	145			1,839
$250 and under $300	1	5	77	131	127	9		350
$300 and under $350		26	29	73	3	1		132
$350 and under $400		7	7	1	1		45	61
$400 and under $450			14	6		4		24
$450 and under $500			1	2	6			9
$500 and under $550				2	3			5
$550 and under $600								
$600 and under $650								
$650 and under $700								
$700 and under $750								
$750 and over								
Not reported	2	34	650	317	3			1,006
Total	72	2,931	5,096	2,297	1,091	178	45	[1] 11,710

[1] Not including 1 dwelling for which rent per room was not reported.

ADMINISTRATION.

As already stated, the housing work of all the coal companies in this region is carried on as incidental to the main enterprise of coal mining. Each local superintendent is charged with the management of the housing in his locality. This carries with it control over community life, regulation of sanitary conditions, and general policing of the community.

Rent is generally collected semimonthly. Only five of the 32 companies report making monthly collections. Without exception rent is deducted from the pay of the miner along with the other deductions.[5] It is also the practice to defer the collection of the rent in time of sickness or of shutdown of the mine until the resumption of work, when collection is made in installments. Five of the 32 companies report that they allow a rebate on the rent during sickness or unemployment of the miner. Several observe no definite policy in that respect but judge each case on its merits. Several instances may be cited

[5] The different kinds of deductions made from a miner's pay may be indicated from the following, as shown by the deduction slip of a large company in Pennsylvania: Blacksmithing, checkweighman, rents, house coal, brass checks, explosives, mercantile-store account, insurance, miner's dues, special collections, accident fund, water account, and gas account.

Legally, company stores are abolished, but there is no bar to the formation of store companies, the capital ownership of which is in the same hands as the mining enterprise. In Pennsylvania almost every company town has such a store, and store credits are regularly deducted from the wages of the miner.

where pensioners or widows of former employees occupy company houses without paying any rent.

In all houses of 27 of the 32 mining companies reported, rent includes the house and water; in the case of two companies it also includes light; and in three, water, light, and coal. It may also be mentioned that the rent always covers such garbage and rubbish collection and general sanitary inspection and cleaning as may be afforded in the village by the company.

MAINTENANCE.

While, as already stated, there has been little or no change in recent years in the design and size of the miner's house, there has been an improvement in the care taken to keep the company towns fairly clean and sanitary. That this has not always been accomplished is attested by some of the illustrations here shown and by the reports of the agents who traveled through the region. Unguttered dirt roads are still the rule. In several instances there were accumulations of cans, rubbish, and débris; in both streets and alleys weeds grew where grass should have been. The larger operators were apparently making efforts to change the aspect of mining towns in these respects, however. Houses were being repaired and painted, and regular systematic cleaning up of premises enforced or undertaken by the companies. In these better-appearing towns garbage and rubbish receptacles were provided and were emptied at regular intervals. In a few towns it was reported that no provision was made for garbage collection, and frequently where it was stated that the company disposed of the garbage for its tenants it was reported that removal was made monthly or even bimonthly. In such cases it may be assumed that only rubbish was removed, and that tenants probably fed the table waste to pigs or chickens. In only a few communities had the company either provided garbage and rubbish receptacles or required the tenants to do so. Where such was the practice a marked improvement in the appearance of the alleys and streets was noted over those of the towns where there were no such requirements. Where special receptacles were provided no trouble was experienced in getting tenants to use them.

Ordinary privy vaults, some of concrete, cleaned generally annually, are the rule in this region. Two towns only were using a dry chemical vault system of night-soil destruction, and in only two were pumps employed for removal of privy contents.

Encouragement of gardening by giving prizes has done much to improve sanitary conditions, putting an end to barren courtyards, which are sources of dust and dirt, and aid in the spread of disease. The products of the garden, too, tend to lower the cost of living.

Fences are not generally provided by the companies, and consequently makeshift fences of various kinds of ugliness have been provided by tenants. The larger companies have provided uniform fences for their towns in order to encourage gardening and care of the premises. Fences are frequently kept whitewashed.

The mining towns of the region are generally fairly accessible to larger centers by trolley and steam road or jitney service. The schools and the church are the principal social centers. The infrequency of motion-picture theaters should be noted. Usually the only store in town is the company store.

Very few of the towns are incorporated as governmental units, so that company control extends both to the sanitary and administrative policy of the community and to the provision of all means of recreation within the town. Schools and church sites are provided by the controlling company.

COST OF MAINTENANCE.

It has been almost impossible to secure comparable data regarding the finances of the companies as respects housing. Methods of accounting vary so greatly that comparisons between companies are almost out of the question. The facts as to a few companies, however, are available.

Four companies in Pennsylvania, which charged to maintenance the general repairs to houses, including labor and material, fencing, work of keeping the premises clean, street cleaning, and lighting and drainage, but not insurance and depreciation, show that such charges formed 38.1 per cent of the rent receipts. This is a statement based on a five-year average as shown in the table below. Taxes may be considered as included in the above figure, since such functions as street cleaning and lighting, drainage, etc., are burdens ordinarily borne by taxes.

TABLE 26.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF 4 BITUMINOUS-COAL COMPANIES IN PENNSYLVANIA, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$122,433.14	$37,666.28	30.8
1912	131,636.21	40,600.56	30.8
1913	140,776.99	62,622.86	44.5
1914	146,856.04	57,443.50	39.1
1915	147,019.80	64,300.31	43.7
Average	137,744.44	52,526.70	38.1

A single coal company in West Virginia, which did not specify exactly what it did charge to maintenance, shows a ratio of 39.7 per cent in the relation between the maintenance charge and its average annual rent receipts for the five-year period, 1910 to 1915.

TABLE 27.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF A BITUMINOUS-COAL COMPANY IN WEST VIRGINIA, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$37,345.48	$7,654.72	20.5
1912	46,856.42	19,703.59	42.1
1913	49,179.06	18,338.97	37.3
1914	48,393.50	19,787.69	40.9
1915	42,477.33	23,612.71	55.6
Average	44,850.36	17,819.54	39.7

Two companies in Pennsylvania, which report the inclusion of taxes and insurance in these charges, show that for the four-year period, 1912 to 1915, 63.4 per cent of their rent receipts were absorbed for that purpose. These two companies, one of which began building in 1902, the other in 1904, report the total original cost of their houses as $1,048,505. If the average annual charges noted above are deducted from the average annual rent receipts, there is left the sum of $31,938. This is net return for interest on the cost of the houses, not including land, of 3 per cent. Depreciation may perhaps be left out of consideration, as being cared for in the charges for repairs and maintenance.

TABLE 28.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF 2 BITUMINOUS-COAL COMPANIES IN PENNSYLVANIA, 1912 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1912	$76,295.31	$49,032.18	64.3
1913	84,926.90	64,721.99	76.2
1914	92,040.84	55,164.57	59.9
1915	96,887.93	52,479.27	54.7
Average	87,287.75	55,349.50	63.4

CHAPTER VI.—COAL, IRON, AND STEEL REGION OF THE SOUTH.

Certain reasons present themselves for considering together housing conditions in the coal and iron and steel manufacturing region of the South. First, the industry is considerably interlocked in control, the same companies owning both iron and coal mines and steel plants; second, the region is compactly located in the vicinity of one large city, Birmingham, Ala.; third, housing conditions are very similar in the locality because the same traditions and conventions as to design and plans of houses have shaped development; and fourth, the class of labor housed is very similar, largely unskilled colored labor.

While coal and iron were discovered in Alabama some time before the Civil War, these deposits were not commercially exploited to any extent until during the Civil War; and not until the eighties were the Birmingham beds developed on any considerable scale.[1] Development in Tennessee and Kentucky occurred during about the same period. The earliest-established coal company included in the Bureau's survey in Alabama dated from 1887; in Kentucky from 1871; and in Tennessee from 1875.

The iron-mining communities and the iron and steel manufacturing towns covered are all located in the vicinity of Birmingham. Of the former, one dates from 1880, another from 1882, and the third from 1890; and of the latter, one dates from 1882, another from 1887, and a third from 1905. The houses of the early period of development were extremely primitive. Those of one of the steel companies, for instance, had been built in the form of board and batten rows, one story high, a single room to the family, neither ceiled nor plastered inside, and with small windows and unpainted exterior.

[1] Clark, Victor D.: The History of Manufactures in the United States, 1607 to 1860, Washington, Carnegie Institution, 1916, pp. 497, 498. Swank, James M.: History of the Manufacture of Iron in All Ages, Philadelphia, 1884, p. 231.

For the most part the houses in the region have been constructed since 1905. Only about 10 per cent were built before 1901. This is set forth in the table following:

TABLE 29.—NUMBER OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, BY INDUSTRY GROUP AND BY YEAR OF CONSTRUCTION—SOUTHERN COAL, IRON, AND STEEL REGION.

Year of construction.	Coal mining.				Iron mining.			
	Detached, frame.	Semi-detached, frame.	Total.		Detached, frame.	Semi-detached, frame.	Total.	
			Number.	Per cent.			Number.	Per cent.
Before 1881								
1881–1890	114		114	2.9				
1891–1900	200		200	5.1				
1901–1905	881	8	889	22.8				
1906–1910	1,302	47	1,349	34.6	39		39	28.7
1911	265	66	331	8.5				
1912	60		60	1.5	70		70	51.5
1913	178		178	4.6				
1914	291	322	613	15.7	1		1	.7
1915	13	2	15	.4				
1916	107	38	145	3.7	2		2	1.5
1917	10		10	.3	16	8	24	17.6
Total	3,421	483	3,904	100.0	128	8	136	100.0

Year of construction.	Iron and steel mills.				Grand total.	
	Detached, frame.	Semi-detached, frame.	Total.		Number.	Per cent.
			Number.	Per cent.		
Before 1881						
1881–1890	123		123	71.1	237	5.6
1891–1900					200	4.7
1901–1905	6	36	42	24.3	931	22.1
1906–1910					1,388	32.9
1911					331	7.9
1912					130	3.1
1913					178	4.2
1914					614	14.6
1915					15	.4
1916	8		8	4.6	155	3.7
1917					34	.8
Total	137	36	173	100.0	[1] 4,213	100.0

[1] Not including 2,712 dwellings for which year of construction or type of dwelling was not reported.

SCOPE OF SURVEY.

The Bureau's survey included 24 southern bituminous-coal mining companies, 11 of which operate in Alabama, 3 in Tennessee, and 10 in Kentucky. The iron-mining towns and the iron and steel communities, as stated, are all located in the vicinity of Birmingham, Ala. The scope of the investigation in this region is set forth in the table following:



FIG. 23.—NEW COAL MINING CAMP, CONSTRUCTED IN 1916.

Houses built before grading and laying of streets. All cottages of similar plan and adapted for conversion into double houses. Used as one-family 4-room houses. Running water in kitchen, electric light. Ceiled inside, composition roof. Final cost $807 (house proper, $666; wiring, $30; piping for water, $45; fences, $31; clearing site, $10; grading streets, $25); rent, $6 per month.



FIG. 24.—IRON-MINING TOWN OF THE BETTER CLASS IN THE BIRMINGHAM DISTRICT (ALA.).

Typical 4-room cottages convertible into double houses.

TABLE 30.—NUMBER OF EMPLOYEES, AND NUMBER AND PER CENT OF EMPLOYEES HOUSED, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

Industry group.	Number of companies.	Number of establishments.	Number of employees.	Number of employees housed.	Per cent of employees housed.
Bituminous-coal mining	24	29	[1] 18,694	[1] 15,035	80.4
Iron mining	3	3	1,497	805	53.8
Iron and steel mills	3	3	3,180	930	29.2
Total	30	35	[1] 23,371	[1] 16,770	71.8

[1] Not including one company with 500 employees for which number housed was not reported.

For the companies reporting on the subject, the average number of employees to the house is 2 in the coal-mining towns, 1.5 in the iron region, and 1.3 in the iron and steel communities. The houses average rather low in the number of rooms per dwelling—namely, 3.5. The number of employees per company house for the three groups of companies combined is 1.9. The larger number of employees per house in the coal and iron mining camps is probably due to the greater isolation of these camps and the consequent greater relative shortage in houses; the steel-plant houses are in competition with housing accommodation in the near-by city of Birmingham.

The following table shows the number and per cent of dwellings of each specified type and material of construction, by industry group:

TABLE 31.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, BY INDUSTRY GROUP.

Industry group.	Type of house.					Material of construction.				
	Detached.		Semi-detached.		Total.	Frame.		Brick.		Total.
	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	
Bituminous-coal mining	5,177	90.9	521	9.1	5,698	5,698	100.0			5,698
Iron mining	482	92.0	42	8.0	524	524	100.0			524
Iron and steel mills	457	65.0	246	35.0	703	668	95.0	35	5.0	703
Total	6,116	88.3	809	11.7	6,925	6,890	99.5	35	.5	6,925

THE COMPANY TOWN.

With one or two exceptions the company towns of the region have not been formally planned; nor are the streets paved and parked. Such road or street covering as has been used consists of dolomite screenings or a sort of gravel. Though the rectangular plan is generally used, certain principal streets have been laid according to land contours. On the other hand, in the distinctly less well-kept towns, even where the ground is rugged and hilly, streets are not in evidence. The thoroughfares between the houses are zigzagging

paths, undrained and guttered with surface waters. Opportunities for careful and proper drainage are offered, however, as the villages are usually located on high ground near the plants or mines.

There is no crowding of houses in the villages; open space is found in abundance in and around them. No lots are under 25 feet in width, most of them are between 50 and 75 feet, and a very considerable proportion are 75 feet or over.

As the soil is rather poor, little gardening is in evidence. The companies, however, generally attempt to encourage gardening by providing fertilizer and doing free plowing for the tenants. Some companies also, try to stimulate gardening by giving prizes.

The steel manufacturing towns in the Birmingham district are easily accessible to Birmingham and to Bessemer by street car. The iron and coal mining towns are very much less accessible, some being as far as 20 miles and some even 55 miles from Birmingham. The Tennessee and Kentucky mining towns are extremely isolated, connected with near-by towns only by a single train, perhaps, a day, and some being as far as 80 miles from any place of considerable size.

In each town there is a Negro district and a white district. The latter district is in turn usually subdivided so that Italians are housed on one street, Greeks on another, and Polish on still another. Perhaps a relatively greater proportion of the labor housed in the towns of this region is unskilled labor than in the company towns of other parts of the United States, but no exact data on that point are available. The Negro quarters of many of the towns are not so well maintained nor the houses so good as those of the district occupied by white employees (Figs. 25 and 26). The Negro quarters in one town, for instance, immediately adjoin the waste heap of the furnace, the heap towering high above the houses. The smoke from the furnaces blows over them, as the houses face the east, and the prevailing winds are from the west or southwest.

PUBLIC UTILITIES AND CIVIC IMPROVEMENTS.

The water supply of practically all the mining communities is spring or well water, generally piped by the companies into the yards of tenants. One community was supplied by a local municipal water system. Very few houses throughout the region have an inside water system.[2] In one of the iron-mining towns water is drawn from limestone springs, in another it comes from wells drilled to a depth of from 60 to 180 feet, and in a third community a stream of water from the limestone reef is pumped to the surface and piped throughout the village. The springs or wells are carefully protected and inclosed to prevent contamination of the water supply. The company which

[2] See Table 38, p. 80.



FIG. 25.—REAR OF HOUSES OF NEGRO EMPLOYEES OF A STEEL MILL.

Cinder-covered courts. Adjoins waste pile near furnaces.



FIG. 26.—VIEW OF PRINCIPAL STREET OF COMMUNITY, THE NEGRO QUARTERS OF WHICH ARE SHOWN IN FIG. 25. THIS IS WHITE SECTION OF VILLAGE.



FIG. 27.—THREE-ROOM COTTAGE IN A MINING TOWN IN KENTUCKY.

Cost in 1912–13, $425 (33 built at one time). Rent, $8 per month. Heated by grate. Hydrant water. No modern improvements.



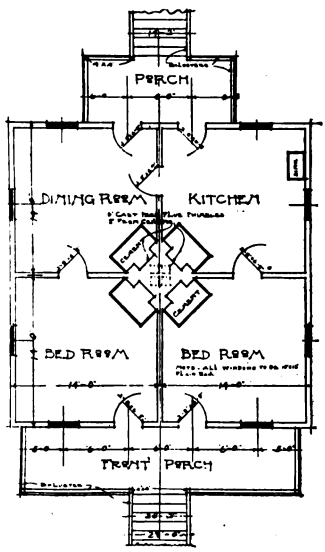


FIG. 28.—PICTURE AND PLAN OF TYPICAL 4-ROOM FRAME HOUSE IN MINING TOWN IN ALABAMA.

controls the communities, the water supply of which is here described, has the water regularly tested at its hygienic laboratories. At two of its coal-mining towns, one of which is 9 miles from Birmingham, filtration plants have been installed.

Owing to the ruggedness of the country, abundance of space, and the rural location of the communities, sewer systems have not been deemed absolute necessities. Only in a part of each of seven coal-mining towns, out of the 25 covered in the survey, is there any sanitary sewer systems, the same being true in one of the three iron-mining towns, and in one of the three steel manufacturing towns.

Electricity for street lighting and for the houses is very general. Only five of 25 coal-mining towns in the district are without electric lighting, while all iron-mining and steel towns are supplied with this convenience. No gas is used in this region.

Schools, churches, lodge halls, and playgrounds are provided by the two largest companies operating in the Birmingham district. In two of the 25 coal-mining communities located in Alabama, Tennessee, and Kentucky hospitals are maintained by the companies specially for employees and their families. In three additional towns only emergency rooms are provided, in another community the company assists in the maintenance of a hospital, while in another the hospital is endowed and supported by other interests than the company. One of the three iron-mining camps has a company hospital, another has a hospital partly supported by the company, and a third is without hospital provision. The steel manufacturing towns depend entirely upon local city hospital facilities.

The manner and extent of provision of schools, churches, and playgrounds are set forth in the following table:

TABLE 32.—NUMBER OF COMMUNITIES IN WHICH SPECIFIED INSTITUTIONS ARE PROVIDED, BY INDUSTRY GROUP AND MANNER OF PROVISION—SOUTHERN COAL, IRON, AND STEEL REGION.

Institution and industry groups.	Number of communities in which institution is provided by—			No provision made.	Total.
	Company.	Assistance of company.	Other agency.		
Schools:					
Coal mining		20	5		25
Iron mining		3			3
Iron and steel mills		2	1		3
Churches:					
Coal mining	4	14	5	2	25
Iron mining		1		2	3
Iron and steel mills	2			1	3
Playgrounds:					
Coal mining	8			17	25
Iron mining	2			1	3
Iron and steel mills	2			1	3

TYPES OF HOUSES.

Only two types of houses are found in the southern bituminous region—the single or detached house and the double or semi-detached house. All are of frame, built in the form of one-story cottages, generally square and hip-roofed. Most of them are plastered or ceiled inside and weatherboarded outside. There are still to be found several survivals of an earlier day, of board and batten, unpainted and weatherbeaten. All houses are still painted the same color throughout each mining town. As a whole, too, they need paint badly. Some rather quaint whitewashed cottages are found in the mining towns of Tennessee.

The prevailing plan of house in the Birmingham district is a square hip-roofed cottage about 28 feet by 28 feet with a chimney in the center of the roof, a front porch running the full length of the house, and a small porch at the rear. (Fig. 28.) The houses are generally raised from the ground by brick piers 4 or 5 feet high, the area under the house being usually uninclosed. In the Tennessee and Kentucky coal fields, small gable-roof cottages prevail. These, too, are generally without cellars; front and rear porches are common.

A type of house more or less peculiar to all small Southern towns is the so-called "shotgun" house, shaped like an oblong box and divided into three rooms in a row and frequently with the doors connecting the rooms in alignment. (Fig. 30.)

SIZE OF DWELLINGS.

The prevailing size of dwelling in the coal-mining camps consists of four rooms, in the iron-mining towns of two and three rooms, and in the iron and steel towns of two rooms. In this instance the size of the houses provided reflects somewhat the character of the labor force housed. The greater isolation of the coal camps has necessitated provision for a greater variety of employees—skilled, semi-skilled, and unskilled—and hence a greater range in the size of houses provided. The small size of the houses in the iron and steel towns is explained by the fact that one of the companies covered in the survey was particularly delinquent in the provision of improved houses, and housed very largely only its Negro labor force. This class of labor is commonly less well housed than the white labor.

The number and per cent of dwellings having each classified number of rooms are shown in the table following:





FIG. 29—FOUR-ROOM BOARD AND BATTEN HOUSES SHOWN IN LOWER PICTURE RECONSTRUCTED FROM DILAPIDATED ROW SHOWN ABOVE.

Rent $4 a month. Ceiled inside. No improvements except electric light and hydrant in yard outside.



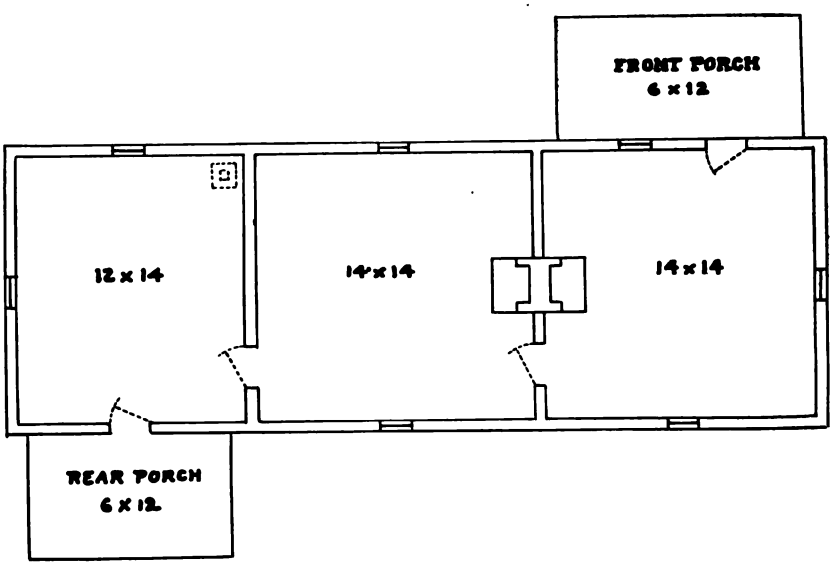


FIG. 30.—PICTURE AND PLAN OF "SHOTGUN" TYPE OF HOUSE COMMON IN SOUTHERN COMPANY TOWNS.



FIG. 31.—BETTER TYPE COMPANY COTTAGE IN SOUTHERN MINING REGION.

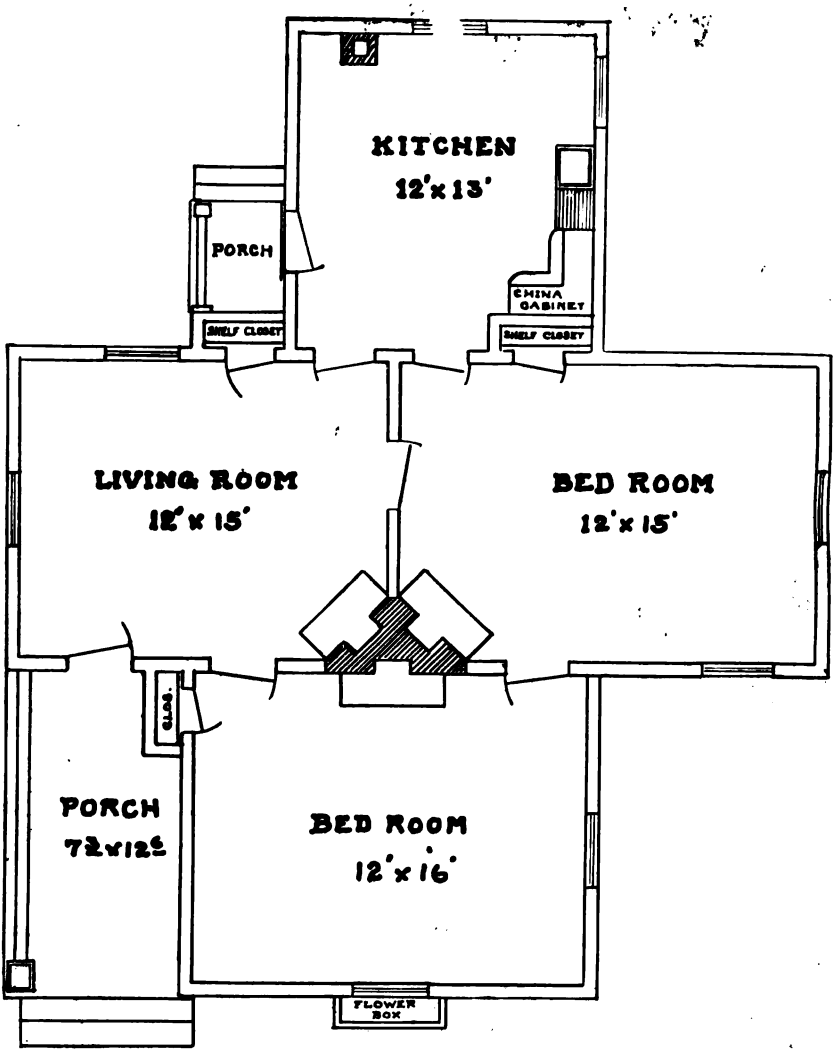


FIG. 32.—PLAN OF BETTER-TYPE COTTAGE SHOWN IN FIG. 31.

TABLE 33.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

Size of dwelling.	Coal mining.		Iron mining.		Iron and steel mills.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
2 rooms	1,027	18.1	128	35.8	528	75.1	1,683	24.9
3 rooms	1,650	29.0	125	34.9	64	9.1	1,839	27.2
4 rooms	2,291	40.2	81	22.6	27	3.8	2,399	35.5
5 rooms	446	7.8	12	3.4	45	6.4	503	7.4
6 rooms	221	3.9	11	3.1	30	4.3	262	3.9
7 rooms	19	.3	1	.3	1	.1	21	.3
8 rooms	28	.5			4	.6	32	.5
9 rooms and over	16	.3			4	.6	20	.3
Total	5,698	100.0	[1] 358	100.0	703	100.0	[1] 6,759	100.0

[1] Not including 3 one-room dwellings and 163 dwellings for which the number of rooms was not reported.

RENT.

The rentals of company dwellings in the southern district appear to be moderate. Out of 6,925 dwellings, 1,755, or 25.3 per cent, rent for $6 and under $7 a month, and 5,331, or 77 per cent, rent for less than $7 a month. The table following shows in detail the number and per cent of dwellings of each classified number of rooms renting at each amount per month:

TABLE 34.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

NUMBER.

Industry group and rent per month.	Dwellings having—									Total.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Bituminous-coal mining:										
Under $3		261								261
$3 and under $4		490	171							661
$4 and under $5		204	297	253	8					762
$5 and under $6		3	540	294	57	11	1	2		908
$6 and under $7		62	529	934	116	10	1			1,652
$7 and under $8		7	28	561	44	12	6		2	660
$8 and under $9			83	219	14	31	1	4		352
$9 and under $10			1	29	128	25		1		184
$10 and under $11			1		75	75	2	8	1	162
$11 and under $12				1			1			2
$12 and under $14					4	52	3	5	5	69
$14 and under $16						5	4	5	3	17
$16 and under $18								2	1	3
$18 and over								1	4	5
Total		1,027	1,650	2,291	446	221	19	28	16	5,698
Iron mining:										
Under $3	3	93								96
$3 and under $4		35	76							111
$4 and under $5			5	8						13
$5 and under $6			44	67	2					113
$6 and under $7				6	9	2	1			18
$7 and under $8						7				7
$8 and under $9					1					1
$9 and under $10						2				2
Total	3	128	125	81	12	11	1			[1] 361

[1] Not including 163 dwellings for which number of rooms was not reported.

TABLE 34.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION—Concluded.

NUMBER.

Industry group and rent per month.	Dwellings having—									Total.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Iron and steel mills:										
$3 and under $4		58								58
$4 and under $5		406	1							407
$5 and under $6		64								64
$6 and under $7			59							59
$7 and under $8			4							4
$8 and under $9				23	32			1		56
$10 and under $11					9					9
$12 and under $14				4	4	23			1	32
$14 and under $16						6	1			7
$16 and under $18									1	1
$18 and over						1		3	2	6
Total		528	64	27	45	30	1	4	4	703

PER CENT.

Bituminous-coal mining:										
Under $3		25.4								4.6
$3 and under $4		47.7	10.4							11.6
$4 and under $5		19.9	18.0	11.0	1.8					13.4
$5 and under $6		.3	32.7	12.8	12.8	5.0	5.3	7.1		15.9
$6 and under $7		6.0	32.1	40.8	26.0	4.5	5.3			29.0
$7 and under $8		.7	1.7	24.5	9.9	5.4	31.6		12.5	11.6
$8 and under $9			5.0	9.6	3.1	14.0	5.3	14.3		6.2
$9 and under $10			.1	1.3	28.7	11.3		3.6		3.2
$10 and under $11			.1		16.8	33.9	10.5	28.6	6.3	2.8
$11 and under $12				(1)			5.3			(1)
$12 and under $14					.9	23.5	15.8	17.9	31.3	1.2
$14 and under $16						2.3	21.1	17.9	18.8	.3
$16 and under $18								7.1	6.3	.1
$18 and over								3.6	25.0	.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Iron mining:										
Under $3	100.0	72.7								26.6
$3 and under $4		27.3	60.8							30.7
$4 and under $5			4.0	9.9						3.6
$5 and under $6			35.2	82.7	16.7					31.3
$6 and under $7				7.4	75.0	18.2	100.0			5.0
$7 and under $8						63.6				1.9
$8 and under $9					8.3					.3
$9 and under $10						18.2				.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0			100.0
Iron and steel mills:										
$3 and under $4		11.0								8.3
$4 and under $5		76.9	1.6							57.9
$5 and under $6		12.1								9.1
$6 and under $7			92.2							8.4
$7 and under $8			6.3							.6
$8 and under $9				85.2	71.1			25.0		8.0
$10 and under $11					20.0					1.3
$12 and under $14				14.8	8.9	76.7	100.0		25.0	4.6
$14 and under $16						20.0				1.0
$16 and under $18									25.0	.1
$18 and over						3.3		75.0	50.0	.9
Total		100.0	100.0	100.0	100.0	100.0	100.0			100.0

[1] Less than one-tenth of 1 per cent.

Table 35 shows in summary form the number and per cent of dwellings renting for each classified amount per month, by industry group:

TABLE 35.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

Classified amount of rent per month.	Coal mining.		Iron mining.		Iron and steel mills.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $3	261	4.6	117	22.3			378	5.5
$3 and under $4	661	11.6	119	22.7	58	8.2	838	12.1
$4 and under $5	762	13.4	78	14.9	407	57.9	1,247	18.0
$5 and under $6	908	15.9	141	26.9	64	9.1	1,113	16.1
$6 and under $7	1,652	29.0	44	8.4	59	8.4	1,755	25.3
$7 and under $8	660	11.6	12	2.3	4	.6	676	9.8
$8 and under $9	352	6.2	3	.6	56	8.0	411	5.9
$9 and under $10	184	3.2	2	.4			186	2.7
$10 and under $11	162	2.8	8	1.5	9	1.3	179	2.6
$11 and under $12	2	(1)					2	(1)
$12 and under $14	69	1.2			32	4.5	101	1.4
$14 and under $16	17	.3			7	1.0	24	.3
$16 and under $18	3	.1			1	.1	4	.1
$18 and over	5	.1			6	.9	11	.2
Total	5,698	100.0	524	100.0	703	100.0	6,925	100.0

[1] Less than one-tenth of 1 per cent.

Tables 36 and 37 contain, respectively, detailed and summary figures showing the number and per cent of dwellings renting at each classified amount per room per month, by industry group.

TABLE 36.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY INDUSTRY GROUP, TYPE OF DWELLING, AND MATERIAL OF CONSTRUCTION—SOUTHERN COAL, IRON, AND STEEL REGION.

NUMBER.

Industry group, type of dwelling, and material of construction.	Dwellings renting at each classified amount per room per month.							Total.
	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$3.50 and under $4.	
Bituminous-coal mining:								
Detached frame	26	1,390	2,449	1,149	92	64	7	5,177
Semidetached, frame		20	501					521
Total	26	1,410	2,950	1,149	92	64	7	5,698
Iron mining:								
Detached, frame	1	229	89					[1] 319
Semidetached, frame		38	4					42
Total	1	267	93					[1] 361
Iron and steel mills:								
Detached, frame		2	68	281	66	5		422
Detached, brick		1	23	5	6			35
Semidetached, frame				246				246
Total		3	91	532	72	5		703
All industries combined:								
Detached, frame	27	1,621	2,606	1,430	158	69	7	[1] 5,918
Detached, brick		1	23	5	6			35
Semidetached, frame		58	505	246				809
Total	27	1,680	3,134	1,681	164	69	7	[1] 6,762

PER CENT.

Bituminous-coal mining:								
Detached, frame	0.5	26.9	47.3	22.2	1.8	1.2	0.1	100.0
Semidetached, frame		3.8	96.2					100.0
Total	.5	24.7	51.8	20.2	1.6	1.1	.1	100.0
Iron mining:								
Detached, frame	.3	71.7	28.0					100.0
Semidetached, frame		90.0	10.0					100.0
Total	.3	74.0	25.7					100.0
Iron and steel mills:								
Detached, frame		.5	16.1	66.6	15.6	1.2		100.0
Detached, brick		2.9	65.7	14.3	17.1			100.0
Semidetached, frame				100.0				100.0
Total		.4	13.0	75.7	10.2	.7		100.0
All industries combined:								
Detached, frame	.5	27.4	44.0	24.1	2.7	1.2	.1	100.0
Detached, brick		2.9	65.7	14.3	17.1			100.0
Semidetached, frame		7.2	62.4	30.4				100.0
Total	.4	24.8	46.4	24.9	2.4	1.0	.1	100.0

[1] Not including 163 dwellings for which rent per room was not reported.

TABLE 37.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

Classified amount of rent per room.	Coal mining.		Iron mining.		Iron and steel mills.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $1	26	0.5	1	0.3			27	0.4
$1 and under $1.50	1,410	24.7	267	73.9	3	0.4	1,680	24.8
$1.50 and under $2	2,950	51.8	93	25.8	91	13.0	3,134	46.4
$2 and under $2.50	1,149	20.2			532	75.7	1,681	24.9
$2.50 and under $3	92	1.6			72	10.2	164	2.4
$3 and under $3.50	64	1.1			5	.7	69	1.0
$3.50 and under $4	7	.1					7	.1
Total	5,698	100.0	[1] 361	100.0	703	100.0	[1] 6,762	100.0

[1] Not including 163 dwellings for which rent was not reported.

MODERN IMPROVEMENTS.

Only a very small proportion of the company dwellings in this region have modern sanitary equipment in the shape of baths, water-closets and running water, both hot and cold. Such houses as do have such improvements are the dwellings of the better-paid white workmen, superintendents, bosses, and technical men. Of the 6,549 dwellings for which complete data on this point have been reported, 106, or 1.6 per cent, have bathtubs and water-closets; 386, or 5.9 per cent, have running water inside, either as part of a complete sanitary system or as a bibb or hydrant connection in the kitchen; and 1,823, or 27.8 per cent, have electricity for lighting purposes, while 4,540, or 69.3 per cent, have no modern conveniences whatever.

The facts as to sanitary equipment are summarized in the following table:

TABLE 38.—NUMBER AND PER CENT OF DWELLINGS HAVING SPECIFIED SANITARY EQUIPMENT, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL INDUSTRY.

Industry group.	Bath, water-closet, sewer or cess-pool, water system, and electric lights.	Bath, water-closet, sewer or cess-pool, and water system.	Running water inside, bath, and electric light.	Water-closet, sewer or cess-pool, running water inside, and electric light.	Water-closet, sewer or cess-pool, and running water inside.	Electric light and running water inside.	No modern conveniences except running water inside.	No modern conveniences except electric light.	No modern conveniences (outside privies).	Total.
Bituminous-coal mining:										
Number	53	1	[1] 7		1	58	148	1,189	3,871	5,328
Per cent	1.0	([2])	0.1		([2])	1.1	2.8	22.3	72.7	100.0
Iron mining:										
Number	19		8	1		10	33	6	447	524
Per cent	3.6		1.5	0.2		1.9	6.3	1.2	85.3	100.0
Iron and steel mills:										
Number	31	2		8		5	1	428	222	697
Per cent	4.4	0.3		1.2		0.7	0.1	61.4	31.9	100.0
Total	103	3	15	9	1	73	182	1,623	4,540	6,549
Per cent	1.6	.1	.2	.1	([2])	1.1	2.8	24.8	69.3	100.0

[1] One has shower bath and no gas or electric light.

[2] Less than one-tenth of 1 per cent.

COST OF CONSTRUCTION.

As all the houses scheduled in the region are frame houses, with the exception of 36 detached brick houses, somewhat similar in size, substantialness of construction, and equipment provided, they may be roughly compared as to cost per room. Taking those houses for which costs have been reported it appears that 2,484, or 53.2 per cent, cost between $100 and $150 per room. About half (50.8 per cent) of the detached frame houses and 71.5 per cent of the semi-detached houses are within that range of cost per room. The table following shows these facts.

TABLE 39.—NUMBER AND PER CENT OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION PER ROOM, BY INDUSTRY GROUP, TYPE OF DWELLING, AND MATERIAL OF CONSTRUCTION—SOUTHERN COAL, IRON, AND STEEL REGION.

NUMBER.

Industry group, type of dwelling, and material of construction.	Dwellings costing each classified amount per room.									Total.
	Under $50.	$50 and under $100.	$100 and under $150.	$150 and under $200.	$200 and under $250.	$250 and under $300.	$300 and under $350.	$350 and under $400.	$400 and under $600.	
Bituminous-coal mining:										
Detached, frame	1	1,283	1,658	468	173	6	1		1	3,591
Semidetached, frame		132	364	21						517
Total	1	1,450	2,022	489	173	6	1		1	4,108
Iron mining:										
Detached, frame	2	47	257	13						319
Semidetached, frame		4	30							34
Total	2	51	287	13						353
Iron and steel mills:										
Detached, frame		6	175	15				8	1	205
Detached, brick									1	1
Semidetached, frame										
Total		6	175	15				8	2	206
All industries combined:										
Detached, frame	3	1,336	2,090	496	173	6	1	8	2	4,115
Detached, brick									1	1
Semidetached, frame		136	394	21						551
Total	3	1,472	2,484	517	173	6	1	8	3	[1] 4,667

PER CENT.

Bituminous-coal mining:										
Detached, frame	[2]	35.7	46.2	13.1	4.8	0.2	[2]		[2]	100.0
Semidetached, frame		25.5	70.4	4.1						100.0
Total	[2]	34.5	49.2	11.9	4.2	.2	[2]		[2]	100.0
Iron mining:										
Detached, frame	0.6	14.7	80.6	4.1						100.0
Semidetached, frame		11.8	88.2							100.0
Total	.6	14.4	81.3	3.7						100.0
Iron and steel mills:										
Detached, frame		2.9	85.4	7.3				3.9	0.5	100.0
Detached, brick									100.0	100.0
Semidetached, frame										
Total		2.9	84.9	7.3				3.9	1.0	100.0
All industries combined:										
Detached, frame	.1	32.5	50.8	12.1	4.2	.1	[2]	.2	[2]	100.0
Detached, brick									100.0	100.0
Semidetached, frame		24.7	71.5	3.8						100.0
Total	.1	31.5	53.2	11.1	3.7	.1	[2]	.2	[2]	100.0

[1] Not including 2,258 dwellings for which cost of construction was not reported.
[2] Less than one-tenth of 1 per cent.

MAINTENANCE.

In none of the companies of the region is the housing work separated from the general business of the company; it becomes a part of plant operation. One of the large operators, however, has a general welfare service department which supervises the housing work and gives it specialized attention.

The maintenance work of the companies extends to the care of the streets and their cleaning and lighting, and generally also to the provision and care of fences. Lawns and gardens are maintained by the tenants, except in the case of the residences of certain officials where the company cares for the lawns. Fences are generally of wire or pickets; board fences are used by only one coal company.

Rubbish and garbage collection is reported as being made by all companies except one. Of 24 coal-mining companies three report that collection is made weekly; three that it is made twice a week; five, every two weeks; and two report "continually" or "man on job all the time." The remaining 11 companies report less frequent collection, such as monthly, three or four times a year, etc. In cases of this kind "collection" probably does not mean garbage collection, but merely a sporadic clean-up or rubbish collection. Of the iron-mining companies, one reports weekly or semiweekly collection, the second semiannual collection, and the third does not concern itself in the matter. All three of the iron and steel companies report collection as weekly.

The open-vault privy still predominates in the mining towns of the South. Only 8 of the 24 coal-mining companies (owning 5,698 houses) have adopted the more approved sanitary-can type of privy. Where such a privy is used collection and disposal of the contents takes place more frequently, much to the improvement of sanitary conditions. One of the eight coal companies is in the Birmingham district. The outhouses provided by this company consist of combination coal bin and privy, situated in the rear of each house and adjoining the alley. The privies are of standard frame construction, ventilated and provided with water-tight cans or receptacles. All openings are screened. Each privy is fitted with a tight flap door at the rear for removal of the can. The cans are removed weekly on a wagon and taken to a septic tank for destruction of the contents. The wagon passes through the alley in taking up the cans.

COST OF MAINTENANCE.

As company bookkeeping methods differ so much, it has not been considered advisable to make any comparison as between the companies operating in the different States here included—Alabama, Tennessee, and Kentucky—in the matter of expenditure for main-

tenance. Only those companies whose reports indicate that they include under "charges to maintenance" somewhat similar items are combined in the presentations below.

Two Tennessee mining companies report charging to maintenance only labor and material necessary for upkeep. Such charges do not include improvements and additions to houses, interest, taxes, insurance, nor garbage collection, street cleaning and improvement, or water. Data from these two companies show that 39 per cent of the rent receipts for a period of five years were absorbed for repairs only. As no information was secured from these companies respecting the amount invested in housing no statement can be made concerning the probable return on their investment.

TABLE 40.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (REPAIR AND UPKEEP ONLY) OF TWO BITUMINOUS-COAL MINING COMPANIES IN TENNESSEE, 1911 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$31,580.30	$11,389.68	36.1
1912	34,264.30	10,967.34	32.0
1913	34,172.06	14,488.95	42.4
1914	32,183.92	14,577.26	45.3
1915	28,163.83	9,561.76	34.0
1916	29,404.79	12,365.91	42.1
Average	31,628.20	12,225.15	38.7

Data reported by one Alabama coal company as to two of its mining towns showed that outlay for maintenance, which included only ordinary repairs (no replacements or additions) and "a small amount for insurance and garbage collection," consumed 32 per cent of the average annual rent receipts for 1911 to 1915. The original cost of the houses in the two towns belonging to this company is reported as $122,065. The difference between the average annual rent receipts and expenses of maintenance is $11,265. This makes a net return of 9.2 per cent for interest, depreciation, and taxes.

Two coal companies in Kentucky which reported only repairs to houses as an offset to their rent receipts showed that 25 per cent of the average receipts for the five-year period 1911 to 1915 were so absorbed, while two other companies in the same region, which included under maintenance general repair to houses and such village upkeep as street cleaning and garbage collection, showed that 41 per cent of their rent receipts were expended for these purposes.

TABLE 41.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (REPAIR ONLY) OF TWO BITUMINOUS-COAL MINING COMPANIES IN KENTUCKY, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$32,163.94	$6,429.06	20.0
1912	37,328.51	9,915.49	26.6
1913	40,907.63	9,716.40	23.8
1914	42,340.98	9,270.40	21.9
1915	42,204.58	12,927.23	30.6
Average	38,989.13	9,651.72	24.8

TABLE 42.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (REPAIR, UPKEEP, GARBAGE COLLECTION, AND STREET CLEANING) OF TWO BITUMINOUS-COAL MINING COMPANIES IN KENTUCKY, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$41,499	$23,583.00	56.8
1912	42,092	16,347.00	38.8
1913	40,092	17,878.00	44.6
1914	46,355	16,820.00	36.3
1915	46,082	13,975.00	30.3
Average	43,214	17,700.60	41.0

Two coal companies in Alabama which include "maintenance," replacement, and insurance expenses, as well as repairs and general house upkeep, find that 64 per cent of the rent receipts are consumed. As shown in the table immediately following, the proportion of the rent receipts absorbed varies from 96 per cent in 1912 to a minimum of 40 per cent in 1914.

TABLE 43.—RELATION OF EXPENDITURE FOR MAINTENANCE (REPAIR, UPKEEP, REPLACEMENTS, AND INSURANCE) TO RENT RECEIPTS OF TWO BITUMINOUS-COAL MINING COMPANIES IN ALABAMA, 1912 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1912	$23,637.52	$22,806.11	96.5
1913	26,559.92	21,449.48	80.8
1914	25,671.66	10,280.07	40.0
1915	26,509.47	13,152.11	49.6
1916	26,175.59	14,822.97	56.6
Average	25,710.83	16,502.15	64.2

In contrast to the above may be cited the case of another coal-mining company in Alabama, which reports that for two of its mining towns ordinary repairs and maintenance alone consumed 69 per cent of its average annual rent receipts for the period 1913 to 1916, the percentage ranging from 96 in 1913 to 48 in 1914. The details are given in the following table:

TABLE 44.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (REPAIR AND UPKEEP, ONLY) OF TWO MINING TOWNS OWNED BY ONE BITUMINOUS-COAL MINING COMPANY IN ALABAMA, 1913 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1913	$14,039.38	$13,546.37	96.5
1914	14,249.44	6,779.53	47.6
1915	15,098.55	7,487.72	49.6
1916	13,791.60	11,568.43	83.9
Average	14,294.74	9,845.51	68.9

Reports from three iron-mining companies in the Birmingham district indicate that 48 per cent of the average annual rent receipts for the period 1913 to 1916 were expended for maintenance; that is, general repair and upkeep of company houses and streets, including garbage and sanitary collection, but not including interest on the investment, insurance, taxes, or depreciation.

TABLE 45.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (NOT INCLUDING INSURANCE, TAXES, OR DEPRECIATION) OF THREE IRON-MINING COMPANIES OF ALABAMA, 1913 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1913	$20,575.20	$10,024.30	48.7
1914	23,226.97	9,560.65	41.2
1915	23,919.75	10,797.48	45.1
1916	25,242.07	14,569.45	57.7
Average	23,241.00	11,237.97	48.4

The great variation shown in the relative amount of the rent receipts which are turned back in the form of maintenance expense is explained partly, undoubtedly, by differing accounting methods and partly by different ideas on the part of the companies as to what constitutes adequate maintenance. Without drawing any very significant conclusions from the scattered data presented, it

appears that less than 50 per cent of the rent receipts are required for general maintenance of the company's housing properties, repair and upkeep of the houses, garbage collection, and street cleaning.

HOUSING INVESTMENT.

While, as shown by the table following, 14 of the companies in this district house three-fourths of their labor force, they find it possible not to spend as an original investment more than two-fifths of the average annual pay roll, in the provision of the houses for their employees. The actual average investment per employee, of the 7,140 housed, is only $228.

TABLE 46.—RELATION BETWEEN TOTAL ORIGINAL COST OF COMPANY HOUSES AND AVERAGE ANNUAL PAY ROLL—SOUTHERN COAL, IRON, AND STEEL REGION.

Industry group.	Number of companies reporting.	Number of employees.	Employees housed.		Average annual pay roll (1911–1915).	Original cost of houses.	Per cent original cost forms of pay roll.	Average cost per employee housed.
			Number.	Per cent.				
Bituminous-coal mining	13	8,987	6,750	75.1	[1] $3,887,939	$1,552,948	39.9	$230
Iron mining	1	522	390	74.7	146,536	75,105	51.3	194
Total	14	9,509	7,140	75.1	4,034,475	1,628,053	40.4	228

[1] One company reported for 3 years, 2 for 4 years, and 4 for 6 years.

Fourteen companies in this region reported the total original cost of all houses constructed, and three reported an inventory valuation, an appraisal put upon the houses by the employees of the companies in question. In making the appraisal regard was had to the condition of the house at the time of appraisal and the amount estimated as necessary to put it into proper state of repair. An estimate was made of the cost of a similar house built new, and the amount required for repairs and remodeling immediately necessary was then deducted. The result was the recorded inventory value of the house.

No land values are included in these house values. The land, moreover, has value primarily for mining purposes, and may very well be left out of consideration in calculating return on the housing investment.

In the case of 12 coal companies reporting, the average annual rent receipts for a five-year period showed a gross return of 11.6 per cent on the investment; in the case of three companies reporting inventory values the return was 20.4 per cent. Two iron mining companies which reported on this point obtained a gross return of 13.1 per cent. It was found that this gross return covers maintenance and repairs, interest, insurance and taxes. No information is available as respects depreciation; depreciation is, however, an uncertain quantity, and may or may not be covered by the maintenance charges.

The results as to return on investment are as follows:

TABLE 47.—RELATION BETWEEN HOUSING INVESTMENT (ORIGINAL COST) AND AVERAGE ANNUAL RENT RECEIPTS, BY INDUSTRY GROUP—SOUTHERN COAL, IRON, AND STEEL REGION.

Industry group.	Number of companies reporting.	Cost of houses.	Average annual rent receipts (1911–1915).	Per cent rent receipts form of original cost.
Bituminous-coal mining:				
Companies reporting original cost	12	$1,471,873	[1] $170,193	11.6
Companies reporting appraised cost	3	211,670	[2] 43,259	20.4
Iron mining: Companies reporting original cost	2	112,305	14,686	13.1

[1] One company reported for 3 years, two for 4 years, and three for 6 years.
[2] One company reported for 3 years, and one for 6 years.

CHAPTER VII.—COAL-MINING TOWNS OF OHIO AND INDIANA.

Only three mining towns were covered in the survey for Ohio and Indiana, two of which were in the former State. This is too small a number, perhaps, to be of any great significance.

The mining towns in this region are of more recent origin than those in Pennsylvania and West Virginia, where bituminous-coal mining began. The two companies in Ohio began operations in 1904 and 1906, respectively, the Indiana company in 1913.

Scope of survey.—The three companies employ, respectively, 387, 650, and 250 men and house 60, 588, and 40 men. The total employed is therefore 1,287 and the number housed 688, or 53.5 per cent. This large percentage is due to one company's housing about 90 per cent of its men.

Table 48 contains data showing the number of employees, the number housed, and the number and size of the dwellings provided by the companies.

TABLE 48.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED—COAL-MINING TOWNS OF OHIO AND INDIANA.

Community.	Number of employees.	Number of employees housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	250	40	20	86	4.3
Community No. 2	387	60	50	190	3.8
Community No. 3	650	588	165	662	4.0
Total	1,287	688	235	938	4.0

Types of houses.—Of the 235 dwellings built by these three companies, 106, or 45.1 per cent, are the semidetached or mine type of house and 129, or 54.9 per cent, single or detached houses, usually of the small-cottage type, an illustration of which appears in Figure 34. All the houses are of frame construction, with weatherboarded (sided) exterior and plastered interior; a few are also papered. All houses are heated by stoves or grates. Of the 235 houses, 125 of the cottage type have a lot frontage of 50 feet and over, while the lots on which the semidetached houses are built are narrower—from 25 to 40 feet frontage.

Rent.—Of the 235 houses, 164, or 69 per cent, rent for $2 and under $2.50 per room per month; 47 for $2.50 and under $3; 20 for $3 and under $3.50; and 4 rent for less than $2 per room per month.

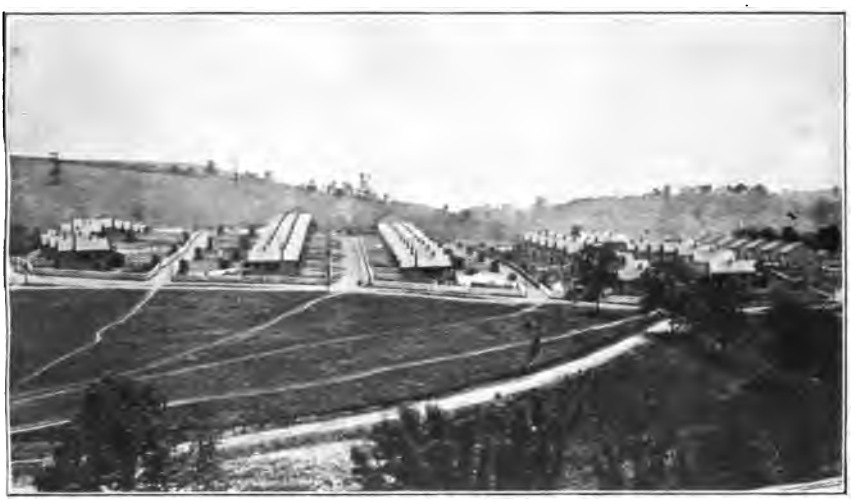


FIG. 33.—MINING TOWN IN OHIO.

Note the uniform type and arrangement of houses and rectangular street layout.



FIG. 34.—MINER'S COTTAGE IN AN OHIO TOWN.

Four rooms; rent $10 per month. Cost in 1912, $675. Electric lights, but no modern sanitary improvements. Better than the average.



FIG. 35.—RATHER CRUDE WESTERN MINING TOWN.

Note absence of walks and lack of parking.



FIG. 36.—WESTERN MINING TOWN WITH RUDIMENTARY DRAINAGE SYSTEM.

In the case of two companies rent includes water, and of one company water and light.

Modern improvements and cost of construction.—Only three houses have modern sanitary equipment—three-piece bathroom—and electric lighting. Seventy-six, or 32.3 per cent, have only electric lights, and 156, or 66.4 per cent, only outside privies. The three houses with modern equipment are single or detached houses erected in 1912, having six rooms each. They are frame houses, plastered and papered inside, cost $1,325 each, and rent for $16 a month. The 76 houses having electric lighting alone are frame cottages, clapboarded, plastered, and papered. Twenty of them having three rooms each cost $600 apiece and 30 having four rooms each cost $675; all were constructed in 1912. The remaining 26 are semidetached houses of four rooms to each family and cost $625 for each family unit. The average rent per room for all of the houses combined was $1.50 and under $3 per room.

Administration and maintenance.—The usual mine-town practice of deducting rents from wages prevails. Rent is collected monthly by one company and semimonthly by two companies. These companies defer rent collection if the employee is sick or if the mines shut down.

The condition of these mining villages as to cleanliness of streets was reported by the agent as fair. The foreign section in one town was reported as very untidy, cans, rubbish, washtubs, etc., being scattered about. Piles of coal here and there and cans and rubbish were observed in another town, where garbage cans and rubbish receptacles were not in use.

Cost of maintenance.—The original cost of the houses of two of the companies amounted to $155,818 and their average annual rent receipts for the years 1911 to 1915 came to $12,124, or 7.8 per cent on the housing investment, not including land. Charges by these companies for maintenance include repairs, taxes, insurance, and depreciation. The average annual charges for the five-year period amounted to $3,973, or 2.5 per cent of the original house cost. This leaves a net return of 5.2 per cent interest on the amount invested in houses, not including land.

CHAPTER VIII.—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.[1]

As elsewhere the housing of employees in the western coal fields seems to have passed through more than one phase—an early one in which almost any accommodations, however poor, would answer the purpose, and the present one of an awakening to the necessity and desirability of improved housing to attract and hold labor and to meet the demands of an interested public.

In the old days scores of employees constructed their own shelters or lived in discarded box cars, and the company houses were simple frame structures, unfenced and unscreened, and with the most primitive of sanitary arrangements. There has been a general improvement in the average house; and the erection of concrete-block or pebble-dash houses, with screens, fences, gardens, trees, and good sanitary arrangements has gradually become the rule instead of the exception.

There are still, of course, wide variations among the camps of different companies and even of the same company. During the present study a community was visited which, though far from a model, had housing accommodations so much superior to those of another company a short distance away that it might have been rated excellent had it not been for the really model camp of still a third employer an hour's ride away.

Since the investigation was of actual housing conditions and not of the causes which produced these conditions, this report is only slightly concerned with the fact that the vast improvements in one notable group of camps are largely the result of a collective agreement between the particular company and its men. This agreement covers house rent, water, lighting, fences, garbage removal, and prizes for gardening. Under the agreement there were also established in the various districts joint committees on sanitation, health, and housing. This agreement has undoubtedly given an impetus to the construction and improvement of houses.

SCOPE OF SURVEY.

Sixteen camps were included in the survey of this region. Of the 4,644 employees reported, 67.8 per cent are housed by the employing companies. At one camp only 6 of the 314 employees are housed; on the other hand, only two camps, both isolated, report that they

[1] The field work in this region and the writing of this chapter were done by Miss Elizabeth A. Hyde, of the Bureau.

house all of their working force. In a few cases a small number of employees come to work by private automobile or jitney, and in other cases there are noncompany houses near at hand or within reasonable distance. Transportation facilities ordinarily are poor, trains being few and irregular and charging rather high rates.

Excluding from consideration the one-room houses, now comparatively few and rapidly being abolished (though 30 out of a total of 49 dwellings were reported for one camp), the four-room house is found to be the prevailing one. Including boarding houses there are, on the average, 2.4 employees to the house. No information is available to show whether or not the keeping of boarders is compulsory in this region.

THE COMPANY TOWN.

Of the 16 camps under consideration, all but one are located in hilly or mountainous country. The roads necessarily follow the contour of the site, except where fairly level spaces permit some use of the checkerboard system. Ordinarily there is one main thoroughfare, with roads going off at a tangent or straggling up the canyons.

In practically all cases the project consisted of laying out a town; in two or three the development adjoins an older community. There were no preliminary housing surveys other than the consideration of such factors as drainage. Recently an improved drainage system, with cement trenches, has been installed in some of the camps. (See Fig. 36.)

Most of the roads are wide enough, but they are not improved. Occasionally the main roadway is crowned, but in only rare cases are there gutters, and even then the walks are simply beaten paths or are capped with cinders.

In a few of the localities visited there are native and pretty evergreens, but, at the time of the investigation, shade trees had been planted in only one or two of the camps. It is reported that in 1917 and 1918 thousands of trees and shrubs were set out in the 12 related camps.

TYPES OF HOUSES.

Schedules were secured from 12 camps of one large company (these cover less than one-half of its properties), which has been conducting housing from 8 to 26 years, and from 4 independent camps, which have been carrying on such work from 8 to 12 years. The oldest houses scheduled were built in 1890, and these are few in number. More than one-third of all are reported as having been built during the five years, 1906 to 1910, and large numbers have been constructed since 1915.

The houses reported by the four independent companies are all frame dwellings with weatherboard exterior. The 12 camps belong-

ing ail to one company report that about 74 per cent of their houses are frame (five out of six being weatherboarded), about 10 per cent plain cement blocks, and about 17 per cent pebble-dash finish. The monotony of the gray cement or pebble-dash is pleasantly relieved by roofs of contrasting and varied colors.

Semidetached houses are less commonly built now than in earlier days, but many four and six room houses are of the type that may be used by two families, two front and two back doors being provided. Of the 1,234 dwellings reported, 93.8 per cent are detached, 4.4 per cent semidetached, and 1.8 per cent in rows.

An interesting though perhaps undesirable arrangement was noted in one camp of the large company, whereby two three-room semidetached houses can be made three dwellings. The front porch has no partition, but the back porches are separate. The front rooms of the two houses are connected by a door. In the event of its being necessary to house three families in the building, one family will be given these two front rooms and the front porch, and the others will each have a middle and a back room and a back porch.

Of this village it should also be stated that at the time of the survey new workers were being taken on at such a rate that a number were being housed in tents until permanent dwellings could be erected.

SIZE OF DWELLINGS.

Large houses are few in number. Of all dwellings reported in this region less than 1 per cent have as many as seven rooms; 64.3 per cent have four rooms and 21.7 per cent have fewer than four. The most pleasing camp visited, data for which unfortunately are not complete, has a number of eight-room houses, some of one story and some of two stories. Of the latter it is said, "The eight-room two-story buildings are quite impossible to rent excepting as a last resort. If we have any empty houses they are always eight-room two-story buildings. The three and four room cottages are always popular and rentable and in demand."

Only the large company was engaged in building extensively at the time of the investigation. The new houses generally were of hollow tile and the prevailing type was the four-room square house with chimney in the middle. Practically all had porches at front and back. Houses for minor officials in most cases were of six rooms and bath. (Fig. 37.) The better types of houses have clothes closets and pantries; on one schedule it is reported that every room in the camp has a closet.

These new houses afford a striking contrast to the older frame cottages and to such one-room shacks as are still standing. A notable example of reconstruction is illustrated in Figures 38 and 39, showing a canyon in the days of tenant-owned shacks, for which the company



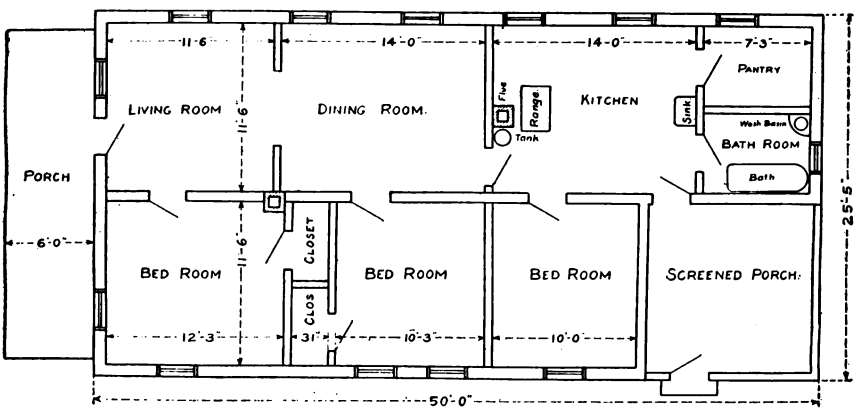


FIG. 37.—PICTURE AND PLAN 6-ROOM BETTER-TYPE COTTAGE OF PEBBLE DASH ON HOLLOW TILE FOR FOREMAN OR OFFICIAL.

Only one built in village in question. Two-piece bathroom. Lot 50 by 100 feet. Rent $15 per month.



FIG. 38.—COLORADO MINING CAMP OF "SHACKS" BUILT BY TENANTS ON COMPANY LAND; NOW DEMOLISHED AND REPLACED BY COMPANY HOUSES SHOWN IN FIG 39.



FIG. 39.—COLORADO MINERS' HOUSES.

Three and four rooms; pebble dash; rent $2 per room per month; cost $712 for three-room, $862 for four-room type.

was paid ground rent of a dollar a month per shack, and the same canyon in the new days of decent company housing.

In 15 cases the interior finish of the houses is reported, all but one describing this as plaster; the smallest and poorest camp visited reports this feature as "some composition board, some building paper."

RENT.

Of the 1,234 houses for which complete information was received, 78.5 per cent rent at less than $9 a month and 20.9 per cent at less than $7. Three-fourths of the houses rent for between $2 and $2.50 per month per room. It would appear that no higher rents are charged for the newer than for the older houses. In the large company investigated, it may be repeated, rents are established by the industrial agreement between employer and employed.

Generally rent includes only house and water. In all of the 12 camps under one control it includes also the use of an electric light on the front porch, since this is the only means of lighting the streets. In three of these 12 camps the use of water is charged for, owing to its scarcity; of the four independent camps it is charged for in two cases, in one of them at the rate of $2 a month per house.

Three of the four independent companies report the charge for electric lights; in one this is 35 cents a light per month, in another 50 cents, and in the third $1.50 to $3 a house, according to power supplied. The company controlling 12 of the camps charges 25 cents a light per month, not including the one on the porch. In a camp in Wyoming the charge is $1 a month for the first light and 75 cents each for the others.

The prevailing custom is for rent to be paid in advance and to be deducted from the wages. As to the collection of rent in case of sickness of the wage earner, on only one of the 16 schedules was it stated definitely that rent is collected later; on all the others the statement was made that the action depends upon the circumstances, except in one case where it was stated that the use of the house is free at such times.

The following table shows in detail the number and per cent of dwellings of each specified number of rooms renting at each classified amount per month:

TABLE 49.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.

NUMBER.

Classified amount of rent per month.	Dwellings having—							Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	
Under $3	22							22
$4 and under $5	11	1						12
$5 and under $6	18		48					66
$6 and under $7		158						158
$7 and under $8		58	6					64
$8 and under $9			644	3				647
$9 and under $10			2	8				10
$10 and under $11			93	26	1			120
$11 and under $12			1			1		2
$12 and under $14				32	84			116
$14 and under $16					10	4		14
$16 and under $18					1	1	1	3
Total	51	217	794	69	96	6	1	1,234

PER CENT.

Under $3	43.1							1.8
$4 and under $5	21.6	0.5						1.0
$5 and under $6	35.3		6.1					5.3
$6 and under $7		72.8						12.8
$7 and under $8		26.7	.8					5.2
$8 and under $9			81.1	4.3				52.4
$9 and under $10			.3	11.6				.8
$10 and under $11			11.7	37.7	1.0			9.7
$11 and under $12			.1			16.7		.2
$12 and under $14				46.4	87.5			9.4
$14 and under $16					10.4	66.7		1.1
$16 and under $18					1.0	16.7	100.0	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 50 shows the number of dwellings renting at each classified amount per month, by type, material of construction, and size of dwelling:

TABLE 50.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE, MATERIAL OF CONSTRUCTION, AND SIZE OF DWELLING—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.

Type, material of construction, and size of dwelling.	Number of dwellings renting at each classified amount per month.											Total.	
	Under $3.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	
Detached, frame:													
2 rooms		11	18										29
3 rooms		1		148	58								207
4 rooms						437	2	93					532
5 rooms						3	8	24		8			43
6 rooms								1		67	6	1	75
7 rooms									1		4	1	6
Detached, stone, 6 rooms											1		1
Detached, cement block:													
4 rooms						82							82
5 rooms								1					1
6 rooms										13			13
8 rooms												1	1
Detached, pebble dash:													
3 rooms				10									10
4 rooms						125			1				126
5 rooms								1		24			25
6 rooms										4	3		7
Semidetached, frame, 4 rooms			48		6								54
Row, frame, 2 rooms	22												22
Total	22	12	66	158	64	647	10	120	2	116	14	3	1,234

The following table contains figures showing the number of dwellings renting at each classified amount per room per month, by type of dwelling and material of construction:

TABLE 51.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.

Type of dwelling and material of construction.	Number of dwellings renting at each classified amount per room per month.				Total.
	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	
Detached:					
Frame		14	693	185	892
Stone				1	1
Cement block			97		97
Pebble dash			141	27	168
Semidetached, frame	48	6			54
Row, frame	22				22
Total	70	20	931	213	1,234

MODERN IMPROVEMENTS.

This industrial group stands at the foot of the list as regards sanitary equipment, no camp among the 16 scheduled having a sewerage system and only about one in every 20 of the houses having running water inside. All dwellings have dry privies; the custom in a number of camps is to change the location of the privy periodically, while other camps have sanitary vault privies of a permanent character.

In about 19 out of every 20 houses the water supply is distributed through hydrants. In a number of camps the supply for drinking is brought from a distance by train or wagon, water pumped from the mines being used for all other purposes. Several of the 12 camps under one control get their water supply from a neighboring city, the city contracting for a long term of years to sell to the company a supply of water for manufacturing, domestic, and other purposes.

In only 4.7 per cent of the houses has a bathtub been installed, and in only 4 per cent is there provision for hot water. These are the homes of mine officials. In a few camps a community bathhouse, intended primarily for the miners, has compartments for the use of the women and children of the camp and makes the absence of baths in the houses less serious. All dwellings are heated by stoves provided by the tenants, or by open grates, usually the former.

No houses are supplied with gas. Electric lights, on the contrary, are more general than in any other industry studied, 91 per cent of the houses being equipped with this convenience.

COST OF CONSTRUCTION.

Of the 995 detached frame dwellings for which the original construction costs were reported 63.1 per cent cost less than $150 per room; of those of cement blocks or pebble-dash finish only 23.4 per cent cost less than $150 per room, while 55.8 per cent cost $150 and under $200, and 20.8 per cent cost from $200 to $300 a room. How much of this difference in costs is due to the period of construction, the expense of building, the later-constructed houses being affected by the recent increases in costs of labor and materials, can not be ascertained.

Table 52 shows, for the 995 dwellings for which data were obtained, the cost per dwelling, by type and material of construction:

TABLE 52.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.

Type of dwelling and material of construction.	Number of dwellings costing each classified amount.						Total.
	Under $250.	$250 and under $500.	$500 and under $750.	$750 and under $1,000.	$1,000 and under $1,250.	$1,250 and under $1,500.	
Detached:							
Frame	11	350	299	44	6		710
Cement block			72	13			85
Pebble dash			82	53		11	146
Semidetached, frame		54					54
Total	11	404	453	110	6	11	[1] 995

[1] Not including 239 dwellings for which cost was not reported.

Construction costs per room by type of dwelling and material of construction are shown in Table 53.

TABLE 53.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION PER ROOM, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—BITUMINOUS-COAL CAMPS OF COLORADO AND WYOMING.

Type of dwelling and material of construction.	Number of dwellings costing each classified amount per room.						Total.
	Under $50.	$50 and under $100.	$100 and under $150.	$150 and under $200.	$200 and under $250.	$250 and under $300.	
Detached:							
Frame	5	3	512	147	43		710
Cement block			18	67			85
Pebble dash			36	62	37	11	146
Semidetached, frame		48	6				54
Total	5	51	572	276	80	11	[1] 995

[1] Not including 239 dwellings for which cost per room was not reported.

BOARDING HOUSES.

Boarding-house practice is not uniform. Of two camps of one company it is reported that in one the men sleep two in a room, but in separate three-quarter beds and that in the other an 18-room house accommodates more than 40 men, double beds being used. In the lobby of this second house there are washing facilities and a few benches; there is no other sitting room. In an outbuilding there are five shower baths.

At the most attractive camp visited, the boarding house, built to accommodate 30 men, had only 15 at the time of inspection. A sitting room downstairs was furnished with tables and chairs; a pleasant dining room had three tables, each seating eight persons; the wash room on the ground floor had liquid soap, five lavatories,

and an abundance of individual towels. The beds were double, and there was one bed to the room, with a big dressing table and ample closet space. The house had a large porch with chairs. The force consisted of the housekeeper, cook, dining-room girl, and dishwasher.

At all places visited rates were uniformly a dollar a day for room and board. The meals served were good; for example, one dinner consisted of steak, potatoes, corn, bread and butter, mince pie, and tea or coffee.

Large numbers of single men, or foreigners whose wives are in Europe, board with private families or form housekeeping groups of members of one race. A boarding house for Austrians, under construction at the time of the investigation, was to be steam heated and have shower baths. Ordinarily the sleeping rooms of boarding houses are not heated

ADMINISTRATION.

In every case it is reported that the housing is conducted as part of the general business of the company, no special department—to say nothing of a separate agency—having this in charge. The agreement which the company operating the majority of the camps has with its employees provides for joint committees of six persons, three representing the employer and three the employees, in each of the five or more districts, which may, of their own initiative, "bring up for discussion at the joint conferences, or have referred to them for consideration and report to the president or other proper officer of the company at any time throughout the year, any matter pertaining to health, hospitals, physicians, nurses, occupational diseases, tuberculosis, sanitation, water supply, sewage system, garbage disposal, street cleaning, wash and locker rooms, housing, rents, gardens, fencing, etc."

Houses are generally rented to employees in the order of their application. In a few instances preference has been given to a more essential employee—electrician, fire boss, or foreman—the nature of whose work is such as to require him to be available at all hours.

MAINTENANCE.

One of the properties visited is an incorporated town, and many employees own their homes; the company owns only 9 houses in the town proper, but has 40 new ones close by. In another community the company houses only six of its employees. With these two exceptions, all the camps visited are so situated that public utilities must, under present conditions, be provided by the employing company, there being no other property holders, with the possible exception of church congregations. As a consequence the company provides police and fire protection, does the sanitary work, and es-

tablishes all rules and restrictions. There are county schools in all but two camps; also playgrounds, in some cases equipped by the company.

The company controlling the large group of camps has a remarkably equipped hospital at a distance of several hours' travel from most of its properties; as circumstances permit, local dispensaries are being built and equipped.

The companies are responsible further for the street cleaning and lighting. Street arc lights are few, generally being used only at an abrupt turn or dangerous crossing; the 12 related camps, as already stated, use the porch lights for purposes of street illumination. Not being financially responsible for these lights some householders allow them to burn throughout the day.

Where there are fences—and fences are becoming general—the householders very often plant gardens. In a few camps the limited water supply restricts this feature. In all the camps of the one large company studied, grass seed is furnished free and prizes for the best gardens are distributed. Gardening in such of these camps as have an abundant water supply is a noticeable feature. Where there is a scarcity of water, the prizes are awarded for general neatness and cleanliness of yards. In one of the independent camps, cement for the walks from house to street is provided free by the company, the tenant laying the walk.

In the matter of fences it is reported of two of the independent companies that there are none, of one that there are few (picket fences have been tried but were torn down), and of one that attractive fences are maintained to mark off the property only, the uniform type being narrow horizontal boards at top and bottom between the posts and two from corner to corner, crossed in the middle. The lots in the 12 related camps are being fenced throughout with a woven-wire fence about 4 feet in height. Because of the Government's encouragement of an increased supply of poultry and eggs, the company controlling these camps is building chicken houses and inclosing yards for employees who may care to undertake poultry raising.

COST OF MAINTENANCE.

For the 12 camps of the one large company, rent receipts and maintenance charges for the five years, 1911 to 1915, were reported. The maintenance charges, which comprise all expenses of inspection, rent collection, repairs to buildings and fences, fire-protection apparatus, camp cleaning, and garbage removal, form 39 per cent of the total rent receipts for the five-year period. This proportion increased considerably in 1915, owing to the increased activities in construction and repairs.

TABLE 54.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF 12 CAMPS OF ONE COAL COMPANY IN COLORADO, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$76,448.20	$29,100.80	38
1912	75,045.67	23,190.62	31
1913	76,414.84	24,220.32	32
1914	73,049.31	25,220.67	35
1915	85,882.44	48,868.13	57
Average	77,368.09	30,120.11	39

A Wyoming camp which reports rent receipts and maintenance expense for 1913 to 1916, shows that the latter was 41 per cent of the former for the four-year period, but the company failed to state what it included under "maintenance."

TABLE 55.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF ONE COAL COMPANY IN WYOMING, 1913 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1913	$12,163.24	$691.34	6
1914	12,153.96	4,790.10	39
1915	14,766.68	7,076.05	48
1916	15,289.13	9,539.31	62
Average	13,593.25	5,524.20	41

Several companies report, for a term of years, their annual pay roll and annual rent receipts. For two companies combined the figures indicate that the original cost of the houses (which accommodate 61 per cent of the employees) comprises 27.3 per cent of the average annual pay roll. For three companies combined, it appears that the average annual rent receipts form 11.6 per cent of the original cost of the houses.

CHAPTER IX.—ANTHRACITE REGION OF PENNSYLVANIA.

Coal was first commercially shipped from the Lehigh Valley of Pennsylvania in 1820; 365 tons constituted the shipment for the year. The anthracite region occupies an area of about 500 square miles in the northeastern part of Pennsylvania. The area being compact and having become densely populated by reason of the development of other industries both depending upon and contributing to the anthracite industry, the isolation of the anthracite mining town is at present not so great as that of other mining towns.[1] Many of the present company-owned houses are now situated in populous cities like Scranton and Wilkes-Barre.

The early miner's house was of the double or semidetached type made of board and batten sides on the framing. A mere dugout served for a cellar. While the type still persists, the appearance and substantialness of the houses recently built have improved. The early houses were neither ceiled nor plastered inside and rarely painted on the outside. To each family, occupying half of the house, was allotted "three and one-half rooms," so called, two on the first floor, a fair-sized room on the second floor, and back of that, formed by the pitch of the roof, the half room, more in the nature of a storage room or attic than a sleeping room. The houses built in those days—i. e., during Civil War times and up to the seventies—naturally had no bath or even running water in the kitchen. "The occupants were fortunate if they had a common hydrant within the distance of an ordinary city block." [2]

Some of these early constructed houses are still in existence and in use by the companies. One company has 20 semidetached houses, built in 1857; another has 88, built in 1876; and still another has 137, erected in 1885. A fourth company has houses dating from 1851. Of the 1,323 houses for which the year of construction is known, 480, or 36.3 per cent, had been erected before 1881; and 753, or 56.9 per cent, before 1890, as brought out in the table on next page.

[1] Parker, Edward W.: Workmen's Houses in the Anthracite Mining Region. Housing problems in America. Proceedings of the Fifth National Housing Conference, Providence, R. I., October, 1916, pp. 54 to 56.

[2] Idem, p. 56.

TABLE 56.—NUMBER OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, BY YEAR OF CONSTRUCTION—ANTHRACITE REGION OF PENNSYLVANIA.

Year of construction.	Detached.		Semidetached.			Row.			Not reported.	Total.
	Frame.	Other.	Frame.	Brick.	Other.	Frame.	Brick.	Other.		
Before 1881	18		458		4					480
1881–1890	59		208			6				273
1891–1900	1		70			20	3			94
1901–1905	4		169			4			[1] 52	229
1906–1910	2		6			8		4		20
1911										
1912	1									1
1913	1	19	44		44					108
1914	6		40							46
1915										
1916			4	40	8			20		72
1917										
Total	92	19	999	40	56	38	3	24	[1] 52	[2] 1,323

[1] Frame. [2] Not including 5,530 dwellings for which year of construction was not reported.

Observation of some of the older houses showed them to be of substantial timber, fully an inch in thickness and free from knots. By removing the battens, papering, and then weatherboarding, warm and comfortable houses may be made out of them.

An interesting view of some housing conditions prevailing in 1898 is given in a report of the local resident engineer to the president of a certain company operating in the Hazleton mining district. Describing "the present [1898] condition of the dwelling houses on the property," the engineer states:

Many of the roofs do not leak very badly, but in attempting to patch an old shingle roof, such as those mentioned as requiring to be renewed, the work of repairing many times will be found to cause new leaks.

The cellars (with exception of Nos. 90 to 99, inclusive, and all the houses recently built) have been excavated under one-half, or along the one side of the block, generally under the front side, and have but one window of two panes of glass, with a screen over the outside, so that the window can be taken out for ventilation. In some cases the occupants have excavated the earth from the other half of the cellar. There should be an additional window in the cellar, so as to afford proper ventilation and aid in drying up dampness that we found to exist. In one case, No. 116 and 117, there was a drain stopped up, causing about 2 to 3 feet of water standing in the cellar.

The privies, in all cases but where the new or recently built houses are located, are in very bad shape; in most cases the appearances would indicate that the contractor was obliged to put down the pits a certain depth and plank up the sides. In sinking these pits rock probably was encountered and the regulation height of plank curbing put in, thus bringing the floor of the privy several feet above the surface. The privy wells are full up to the top of the ground, and the contents of the wells flow out into surface ditches, new houses excepted. In the older houses the privy buildings have the appearance of having been built by the tenants and are poor apologies for the purpose. My opinion is that if these premises came under the inspection of the health officer these affairs would be badly criticized.

Not many of the houses have any protection over the front doors, thereby permitting the storm to drive into the houses under the doors, that do not fit very closely to the

floor. A weatherstrip on the bottom of the door in such cases would assist in remedying this; and a small porch would also be of service, which, if made, would prevent the building of such porches by the tenants as is sometimes the case, and so built do not always improve the external appearance.

If it is concluded to paint the houses—the old ones (the new ones have been painted)—in most cases it will be necessary to new weatherboard one side only, and renail the other three sides of these buildings. If, however, it is not expedient at this time to expend so much money in painting, some patching and renailing of the siding could be made to pass for a while longer, and probably too, some of the roofs might be left untouched in the same way.

The chimneys, where they start from the third or attic floor, should be changed so as to start from the bottom. As now, in these cases, the stovepipe is carried up through the floors, enters the chimney in the attic, and is positively dangerous from fire.

We found many of the houses clean and neat; others just the opposite. The best houses are occupied by Americans, but the majority of the occupants are foreigners.

The age of the houses—their never having been painted, and, as a rule, no more repairs having been made to them than absolute necessity required—will sufficiently account for present condition.

Generally speaking, the same type of house prevails in the anthracite coal region to-day as did in the sixties. At present, however, larger houses than were in use in the early days prevail.

Mr. Parker, of the Anthracite Bureau of Information at Wilkes-Barre, Pa., has thus described the evolution of the miner's house in the region:[3]

The first improvement of this house was the making of the half room into a full room, or nearly so, by reducing the pitch of the back roof, until 4½ feet were given at the rear; otherwise the general character of the house was the same, except for more substantial foundations and the addition of a cellar. Numbers of these houses are still in existence, and when in repair are much desired by the workmen whose families are not too large to be accommodated (save the word) in them. Houses of type No. 1 rented for $3.60 per month, $1 a room; type No. 2 at $5.60 per month. Most of the type No. 2 houses were built about 1870 or shortly after.

The next step in the way of providing ampler quarters for the workmen was in the construction of houses of a type shown in sketch 3. It will be noted that in this type of house the gable roof is centered above the frame and the steep rear roof typical of the first and second types is done away with. These houses were popular, and were amply large for the young married miner, but as the sizes of the families increased (there is no race suicide in the anthracite region) more room was demanded, and it became necessary to add a kitchen in the rear of the house. The houses * * * were also made more attractive and comfortable by the addition of front and side porches. The former porchless houses were not built for artistic effect, and did not produce it. Most of the houses of type No. 3 were also built about 1870. They rented for $5 a month, while those of type No. 4 with the added kitchen and porches rented for $6 a month.

SCOPE OF SURVEY.

The Bureau's survey in the anthracite-coal region covered 24 companies, employing altogether 116,208 men and operating 104 estab-

[3] Parker, Edward W.: Workmen's Houses in the Anthracite Mining Region. Housing problems in America. Proceedings of the Fifth National Housing Conference, Providence, R. I., October, 1916, pp. 57, 58.

lishments or groups of mines. Taking those companies which reported the number housed it appears that they employ 90,608 men and house 20,660, or 22.8 per cent, of their entire force. The largest company supplying information employs approximately 22,000 men. One company employing 11,115 men houses only 2,400, or 21.6 per cent; another employing 725 men houses only 76. The survey in the anthracite region included 6,853 dwellings. Data from 19 companies supplying information on the point show that they secure an average of 2.3 employees per dwelling. The company dwelling averages 5.5 rooms.

THE ANTHRACITE TOWN.

The anthracite-coal town is almost always situated in close proximity to the mine and along any natural highway passing through the region. None have been scientifically planned, and practically all are laid out in rectangular fashion.

As already stated, the towns are fairly compactly located and almost without exception are accessible by rail or by electric lines. They are almost all situated near larger cities. Consequently they are not much more than groups of houses near the shafts and breakers; they are not complete towns in the sense of being self-sufficing, with stores and means of recreation. In that respect they are depending more and more upon the neighboring cities.

As a rule, no paved streets are provided in anthracite mining towns; and no paved alleys were observed in any of those covered by the study. Only a few communities of the 30 visited by the agents of the Bureau were reported as having a street paved with tarvia, macadam, or concrete. The principal street was frequently the principal township highway. Dirt roads, covered in some instances with coal dust waste, are the rule. There is a general lack of care for alleys and roads, although a few notable exceptions are reported.

The streets are generally about 45 feet in width. In certain hillside towns the houses all face one way, and no question as to street widths is involved. Alleys average about 17 or 18 feet in width.

There is no evidence of lot crowding in this region. Lots for each family in the semidetached houses have a width of from 25 to 50 feet or even from 50 to 60 feet. For the single houses the width of the lots varies from 50 to 60 feet.

TYPES OF HOUSES.

The type of house at present prevailing in the region has not changed greatly from that of the days of the beginning of the industry. The tendency has been to enlarge the original type of house. The average size of the miner's family quarters in the anthracite



FIG. 40.—DETACHED HOUSES FOR MINERS IN THE ANTHRACITE COAL REGION.



FIG. 41.—EIGHT-ROOM SEMIDETACHED HOUSES IN ANTHRACITE REGION, BUILT IN 1870.

Probable cost at time of survey (1916) $1,200 per dwelling (family unit); rent $8 per month per dwelling. Stove heat, running water in kitchen, outside privies.

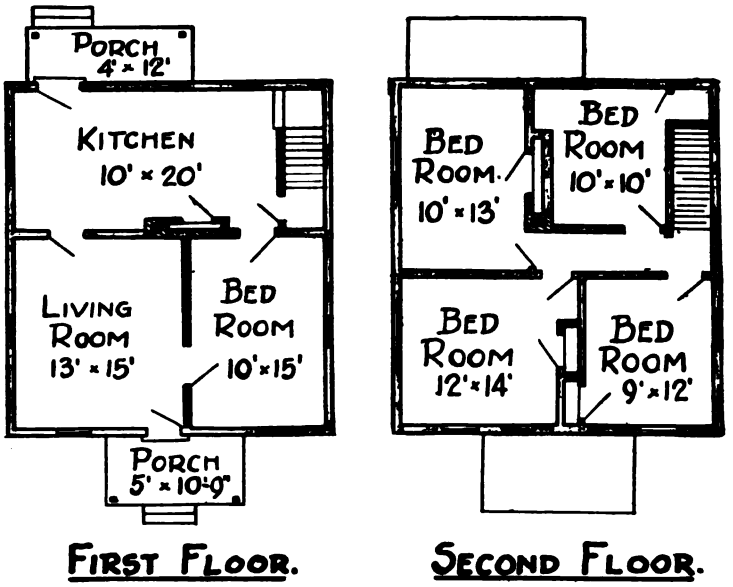


FIG. 42.—FIRST AND SECOND FLOOR PLANS OF DETACHED FRAME HOUSE FOR MINERS IN ANTHRACITE REGION.

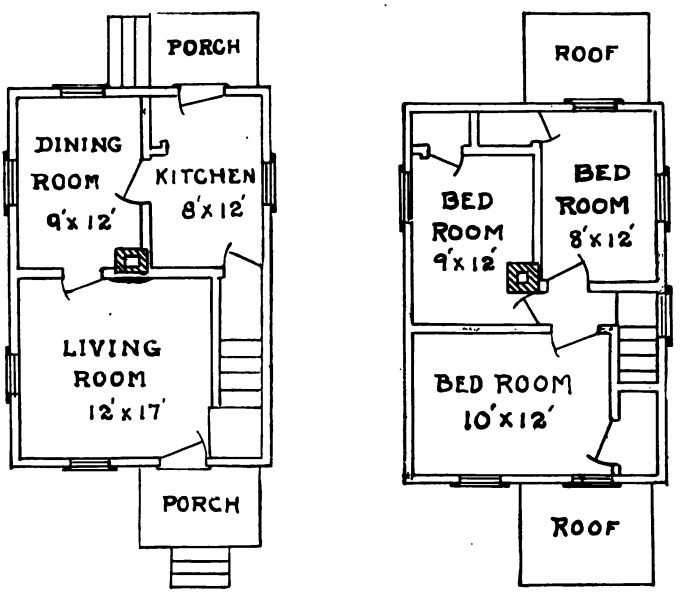


FIG. 43.—FIRST AND SECOND FLOOR PLANS OF DETACHED FRAME HOUSES FOR MINERS IN ANTHRACITE REGION.

region is 5.5 rooms, as already noted, as against 4.4 rooms in the soft-coal region.

With few exceptions the houses are of frame, are weatherboarded, have shingled roofs, and are plastered or ceiled inside. They differ very slightly from the houses of the soft-coal region except as regards their greater average number of rooms.

Of the 6,853 dwellings covered by the survey, 6,708, or 97.9 per cent, are frame dwellings. Only 43, or less than 1 per cent, are of brick, and 102, or 1.5 per cent, are of stone, tile, or concrete, or other combination of materials.

There is a greater proportion of semidetached houses in the anthracite region than in any other locality studied by the Bureau, 4,923, or 71.8 per cent, of the houses here being double or semidetached; 728, or 10.6 per cent, single or detached, and 438, or 6.4 per cent, row dwellings. The type is not reported for 764, or 11.2 per cent.

SIZE OF DWELLINGS.

The distribution of dwellings according to the number of rooms shows that of the 5,320 for which this information has been furnished the largest proportion—1,724, or 32.4 per cent—have six rooms; that the next largest proportion—1,604, or 30.2 per cent—have five rooms. The distribution of dwellings by number of rooms is as follows:

TABLE 57.—NUMBER AND PER CENT OF DWELLINGS HAVING EACH SPECIFIED NUMBER OF ROOMS—ANTHRACITE REGION OF PENNSYLVANIA.

Size of dwelling.	Number of dwellings.	Per cent of total.
2 rooms	37	0.7
3 rooms	247	4.6
4 rooms	920	17.3
5 rooms	1,604	30.2
6 rooms	1,724	32.4
7 rooms	479	9.0
8 rooms	237	4.6
9 rooms and over	72	1.4
Total	5,320	100.0

For 1,533, or 22.4 per cent of the total number of 6,853 reported, no information has been furnished as regards number of rooms.

RENT.

Of the 5,303 dwellings for which rent per month in relation to number of rooms has been reported the rent of 4,589, or 86.5 per cent, is below $8 per month. Taking the dwellings which are typical as respects the number of rooms, namely, five and six room dwellings, it appears that of the former the largest proportion—436, or 27.3 per cent—rent for $3 and under $4 per month, and of the latter the greatest proportion—517, or 30 per cent—rent for $6 and under $7 a month. The details are contained in the following table:

TABLE 58.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—ANTHRACITE REGION OF PENNSYLVANIA.

NUMBER.

Classified amount of rent per month.	Dwellings having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Under $3	17	67	121	109	15	3	1	1	334
$3 and under $4	16	106	138	436	19	57	2	1	775
$4 and under $5	1	60	345	284	189	3	3	1	886
$5 and under $6		5	199	364	414	55	5	2	644
$6 and under $7		5	85	287	517	70	61	3	1,028
$7 and under $8			16	71	358	50	26	1	522
$8 and under $9			13	42	88	31	72	13	259
$9 and under $10					71	10	22	9	112
$10 and under $11					45	65	17	19	146
$11 and under $12				6		8	2	1	17
$12 and under $14					2	89	5	7	103
$14 and under $16					3	2	13	9	27
$16 and under $18					1	25		2	28
$18 and over						11	8	3	22
Total	34	243	917	1,599	1,722	479	237	72	[1] 5,303

PER CENT.

Under $3	50.0	27.6	13.2	6.8	0.9	0.6	0.4	1.4	6.3
$3 and under $4	47.1	43.6	15.0	27.3	1.1	11.9	.8	1.4	14.6
$4 and under $5	2.9	24.7	37.6	17.8	11.0	.6	1.3	1.4	16.7
$5 and under $6		2.1	21.7	22.8	24.0	11.5	2.1	2.8	19.7
$6 and under $7		2.1	9.3	17.9	30.0	14.6	25.7	4.2	19.4
$7 and under $8			1.7	4.4	20.8	10.4	11.0	1.4	9.8
$8 and under $9			1.4	2.6	5.1	6.5	30.4	18.1	4.9
$9 and under $10					4.1	2.1	9.3	12.5	2.1
$10 and under $11					2.6	13.6	7.2	26.4	2.8
$11 and under $12				.4		1.7	.8	1.4	.3
$12 and under $14					.1	18.6	2.1	9.7	1.9
$14 and under $16					.2	.4	5.5	12.5	.5
$16 and under $18					.1	5.2		2.8	.5
$18 and over						2.3	3.4	4.2	.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not including 1,550 dwellings for which rent or number of rooms was not reported.

The rents charged for dwellings of each type and size are brought out in the table below.

TABLE 59.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—ANTHRACITE REGION OF PENNSYLVANIA.

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.													Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and over.	
Detached, frame:														
2 rooms	5		1											6
3 rooms	20	7		5	1									33
4 rooms	40	15	13	15	1		1							85
5 rooms	27	10	20	16	16	18								107
6 rooms	13	10	5	9	11	18	6							72
7 rooms	2	49	2	14	8		2	4	13	6	3			103
8 rooms	1	1		6	2	1	1	4	1		3	6		26
9 rooms	1	1	1	2		1	2				1	2	2	13
10 rooms				2				2		1	1	2		8
11 rooms									2		1	1		4
12 rooms					1		1		4			2		8
14 rooms												1	2	3
15 rooms												1	1	2
Not reported	4	16	30	19	47	47	46	4	5		2	7	6	233
Total	113	109	72	88	87	85	59	14	25	7	11	22	11	703
Detached, hollow tile:														
4 rooms							10							10
5 rooms										6				6
6 rooms												3		3
Total							10			6		3		19
Semidetached, frame:														
2 rooms	12	15												27
3 rooms	34	93	13		4									144
4 rooms	67	104	303	90	84	16	2							666
5 rooms	80	341	208	241	140	51	39							1,100
6 rooms	2	9	183	397	485	324	70	69	45		2			1,586
7 rooms	1	8	1	47	43	50	9	6	48	2	6	2	12	235
8 rooms		1	3	2	59	22	65	18	12	2	2	7		193
9 rooms					1		6	5	6		2			20
10 rooms					1		2		6					9
12 rooms							2	2						4
Not reported	5	56	197	183	148	141	55	14	26		2	2		829
Total	201	627	908	960	965	604	250	114	143	4	14	11	12	4,813
Semidetached, brick: 7 rooms											40			40
Semidetached, hollow tile:														
7 rooms													4	4
8 rooms													8	8
Total													12	12
Semidetached, concrete: 7 rooms											40			40
Semidetached, stone: 4 rooms		3												3
Row, frame:														
3 rooms	13	6	4											23
4 rooms	14	16	25											55
5 rooms	2	85	56	68	16	2	3							232
6 rooms			1	3	9	3	7	2					1	26
7 rooms				2										2
8 rooms				1		3	6							10
Not reported		37	8	1	7	3	2							58
Total	29	144	94	75	32	11	18	2					1	406

TABLE 59.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—ANTHRACITE REGION OF PENNSYLVANIA—Concluded.

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.													Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and over.	
Row, brick: 6 rooms					2	1								3
Row, hollow tile: 7 rooms													20	20
Row, concrete block: 8 rooms									4					4
Type not reported:														
2 rooms		1												1
3 rooms			43											43
4 rooms			4	78										82
5 rooms				46	115									161
6 rooms					10	12	5							27
7 rooms					12		20		4					36
10 rooms									1		2			3
Not reported	1	21	55	63	42	32	151	28			9	6	3	411
Total	1	22	102	187	179	44	176	28	5		11	6	3	764
Grand total	344	905	1,176	1,310	1,265	745	513	158	177	17	116	42	59	[1]6,827

[1] Not including 26 dwellings for which rent was not reported.

Considering the rent paid per room per month, it is seen that the largest number (171, or 36.4 per cent, of the 470 for which data were reported) of single or detached frame dwellings rent for from 50 cents to less than $1; the next largest number (141, or 30 per cent) rent for from $1 to less than $1.50. In the case of double or semidetached frame dwellings, the largest number (1,998 out of 3,984, or 50.2 per cent) range from $1 to less than $1.50 per room per month, and the next largest number (1,563, or 39.2 per cent) from 50 cents to less than $1. The fact that the single houses rent for relatively less per room is explained by the fact that the semidetached houses cost more per room, and therefore to bring the same return must be rented at a higher rate.

Table 60, showing rents per room by type of dwelling and by material of construction, follows:

TABLE 60.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—ANTHRACITE REGION OF PENNSYLVANIA.

Type of dwelling and material of construction.	Number of dwellings renting at each classified amount per room per month.									Total.
	Under 50 cents.	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.00.	$3 and under $3.50.	$4 and under $5.	Not reported.	
Detached:										
Frame	107	171	141	48	3				239	709
Hollow tile					19					19
Semidetached:										
Frame	67	1,563	1,998	334	14	3	3	2	840	4,824
Brick				40						40
Hollow tile					4	8				12
Concrete				40						40
Stone		3							4	7
Row:										
Frame	2	194	146	5		1			63	411
Brick			3							3
Hollow tile					20					20
Concrete blocks			4							4
Type not reported, frame		12	297	44					411	764
Total	176	1,943	2,589	511	60	12	3	2	1,557	6,853

MODERN IMPROVEMENTS.

Information as to conveniences and sanitary equipment provided has been given concerning 4,034 dwellings, or 58.9 per cent of the 6,853 covered in the anthracite region. Of the 4,034 dwellings, 1,824, or 45.2 per cent, have gas or electric light, but in practically all cases it is electricity and not gas which is used. All modern conveniences, including complete three-piece bathroom with sewer or cesspool connections, are found in 255, or 6.3 per cent of the total reported. On the other hand, 1,813, or 44.9 per cent, have no modern conveniences at all, and have outside privies.

The 4,034 dwellings are distributed as to types of conveniences provided, as follows:

TABLE 61.—NUMBER AND PER CENT OF DWELLINGS HAVING SPECIFIED MODERN IMPROVEMENTS—ANTHRACITE REGION OF PENNSYLVANIA.

Improvements.	Number of dwellings.	Per cent of total.
Bath, water-closet, running water, and electric light	[1] 234	5.8
Bath, water-closet, running water	21	.5
Bath, gas or electric light	62	1.5
Water-closet, running water, gas or electric light	170	4.2
Water-closet, running water	360	8.9
Running water, gas or electric light	418	10.4
Running water only	16	.4
Gas or electric light only	940	23.3
Outside privies only	1,813	44.9
Total	4,034	100.0

[1] 40 have combination bath and laundry tub in kitchen.

COST OF CONSTRUCTION.

The data as respects the costs of houses in the anthracite region are extremely unsatisfactory. Defective company records made it impossible to secure a sufficient amount of data to make any reliable inferences possible. Out of 6,853 dwellings included in this part of the study, cost data were secured for only 915. The data for cost of construction of the company dwellings in this district have therefore been omitted.

ADMINISTRATION.

The larger coal companies in the region conduct their housing through a separate land department; for all other companies the housing enterprise is a part of the general operating business, segregated only in the accounting of the company. At each mine the local superintendent oversees the housing and community activities connected with the operation of the mine.

Rents for company houses are collected by deduction from the employee's wages, 8 companies of the 24 included in the survey making deductions semimonthly and 16 monthly. Only two companies deduct rent in advance. A liberal policy appears to be observed in the matter of deferring collection of rent during the illness or unemployment of the worker. A few companies have no rule in that respect, but decide each case on its merits as it arises. Instances were found, too, where pensioners or widows of deceased employees were living rent free in company houses.

MAINTENANCE.

Among different features of company management it may be noted that lawns are made and maintained by the tenant, while fences, where provided, are built and maintained by the company. Only four companies attempt to encourage gardening by giving prizes, while practically all the companies have either written rules or an unwritten agreement that tenants must either keep their houses in fair and habitable condition or vacate. The enforcement of the rule, however, depends largely upon the labor supply. One informant observed that he would put up with tenants now that he would not tolerate when the labor supply was abundant.

Ten of the 24 companies report that they undertake garbage collection for their tenants. However, as 3 of the 10 companies report that collection is made every two months or less frequently, the statement can apply only to rubbish and waste, certainly not to kitchen and table waste. In one instance the duty rests with the city, as the company houses are within an incorporated city.

Except in a few instances the open-vault privy is still used in the region. With regard to the frequency of cleaning, three companies

report this as annual, three as biennial, one as triennial, one as every 18 months, and two as semiannually; two companies report that the matter is left to the tenant, and two report that the privies are moved to a new place when necessary. Other companies report that all privies are cleaned when necessary and not at any regular intervals.

COST OF MAINTENANCE.

Seventeen out of 24 companies covered in the anthracite region reported both rent receipts and annual expenses of maintenance of company houses. These companies may be placed in two groups according to the comparability of the data furnished. In the first group have been placed those which charge to their maintenance account not only ordinary labor and material for upkeep of the company houses, but also insurance, taxes, and additions and improvements, remodeling, etc., of the houses; in the second group, those which do not charge additions, improvements, and remodeling to that account. For the first, group maintenance expenses absorb 69 per cent of the average annual rent receipts, and for the second, 32 per cent. The details are disclosed in the following table:

TABLE 62.—RELATION BETWEEN EXPENDITURE FOR MAINTENANCE AND THE AMOUNT INVESTED IN HOUSING AND RENT RECEIPTS OF CERTAIN COMPANIES IN THE ANTHRACITE-COAL REGION OF PENNSYLVANIA, 1911 TO 1915.

Company.	Value of houses.	Average annual rent receipts, 1911 to 1915.	Expenditure for maintenance.		Return on investment after deduction of charges to maintenance.	
			Amount.	Per cent of rent receipts.	Amount.	Per cent.
Group A: [1]						
Company No. 1	$311,700	$16,564.92	$18,108.88	109	([2])	
Company No. 2	78,900	6,082.32	7,468.14	123	([2])	
Company No. 3	38,330	4,368.54	2,775.63	64	$1,592.91	4.2
Company No. 4	203,400	34,597.41	34,596.30	100	1.11	
Company No. 5	77,000	6,672.75	5,883.62	88	789.13	1.0
Company No. 6	1,134,000	65,640.12	36,887.24	56	28,752.88	2.5
Company No. 7	1,469,000	101,321.27	56,365.94	56	44,955.33	3.1
Company No. 8	([3])	45,670.06	31,414.72	69	14,255.34	([3])
Total	([3])	280,917.39	193,500.47	69	87,416.92	([3])
Group B: [4]						
Company No. 1	553,138	118,101.79	32,099.54	27	86,002.25	15.6
Company No. 2	([3])	6,318.39	5,369.77	85	948.62	([3])
Company No. 3	([3])	7,189.78	1,673.30	23	5,516.48	([3])
Company No. 4	([3])	35,706.00	13,463.00	38	22,243.00	([3])
Company No. 5	18,000	3,138.59	1,411.29	45	1,727.30	9.6
Company No. 6	92,500	11,826.74	1,865.76	16	9,960.98	10.8
Company No. 7	96,300	5,904.35	3,147.86	53	2,756.49	2.9
Company No. 8	26,100	3,166.44	161.45	5	3,004.99	11.5
Company No. 9	([3])	10,726.91	5,250.72	49	5,476.19	([3])
Total	([3])	202,078.99	64,442.69	32	137,636.30	([3])

[1] Maintenance includes upkeep, insurance, taxes, additions, improvements, and remodeling.
[2] Deficit.
[3] Not reported.
[4] Maintenance includes upkeep, insurance, and taxes.

SPECIAL ANTHRACITE COMMUNITIES.

The changes in housing in the anthracite-coal region have consisted in remodeling and repairing existing structures. There has been, as already stated, no building of extensive model communities along lines of new and improved planning. Two exceptional groups of houses have been built, very largely as an experiment, by one of the larger corporations in the region. These developments, however, have not had any very noticeable effect, because of their limited size. Each group contains 40 semidetached dwellings, one group consisting of concrete houses, the other of brick houses. Thus only 40 households are accommodated in each development, whereas at one mine 2,100 men are employed, and at the other 1,500.

COMMUNITY A.

The group of concrete houses consists of 40 semidetached houses or dwellings arranged along the sides of a rectangular area 375 by 430 feet, eight semidetached houses facing the short sides and twelve facing the long sides of the rectangle. Between the rectangular space and the houses there is a roadway about 25 feet wide, graveled and provided with gutters; a strip of parking about 5 feet wide; and a concrete sidewalk about 4 feet wide. The houses are set about 15 feet back from the sidewalk line. A strip of parking surrounds the whole development.

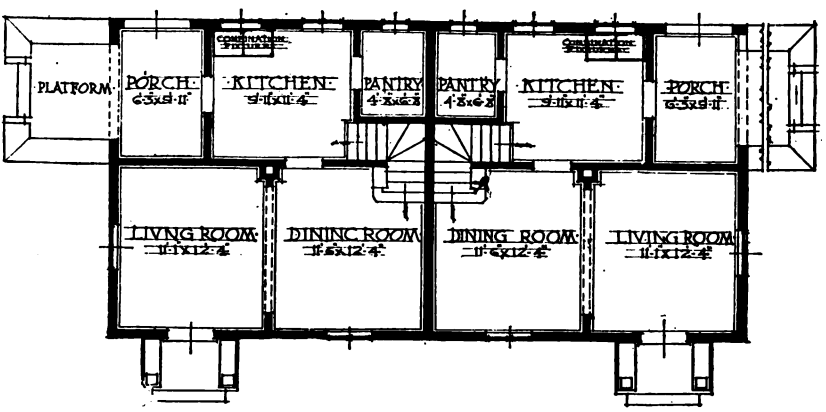
The central area provides a playground and park space of approximately 3.5 acres. A few trees have been planted here, but as yet this space has not been developed; it has been used as a playground though unequipped for this purpose.

The lawns around all of the houses have been exceptionally well maintained; flower pots and shrubbery have been tastefully arranged, relieving the plain white painted concrete exterior of the houses. (Fig. 44.) Gardens are planted on the rear lots between the dwellings and the outhouses. The ground on which the development is located is depressed in the center and rises to form a terrace behind the houses. The lowest point of the site is the northwest corner, from which point drainage is effected. On the whole the drainage situation is not overfavorable and in the spring the cellars of the houses are frequently flooded.

Each dwelling or family unit has a lot 40 by 150 feet.

The shell of the house is made of concrete poured into sectional metal molds, a special patented system. The floors are of reinforced concrete, as are also the stairs, stair casings, and all partitions. The walls are without air spaces; since coal cinders were used in the concrete aggregate, it was believed that dampness would not develop. This, however, has not been the case. One tenant interviewed complained of dampness. The plaster in the three houses which have





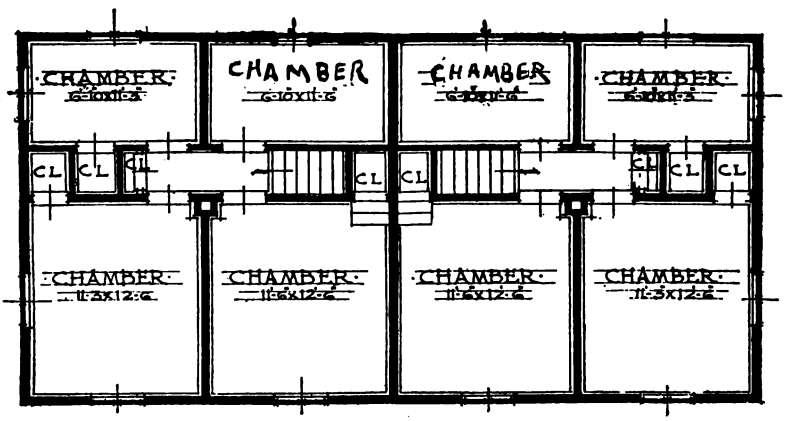
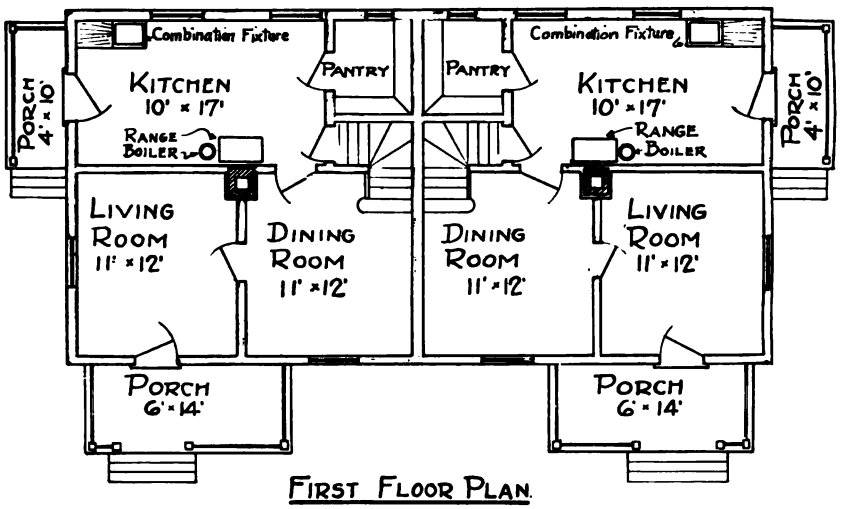
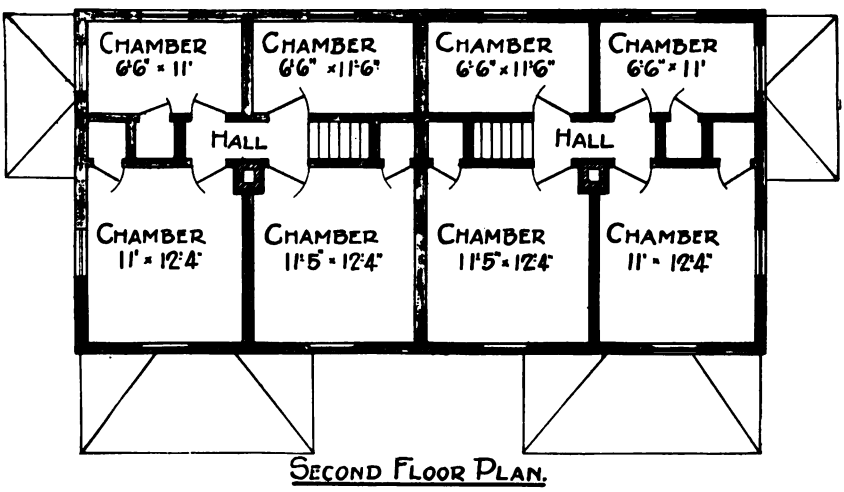


FIG. 44.—PICTURE AND PLANS OF GROUP OF POURED CONCRETE SEMI-DETACHED HOUSES IN ANTHRACITE REGION.



First Floor Plan.



Second Floor Plan.

FIG. 45.—FIRST AND SECOND FLOOR PLANS OF MODERN IMPROVED HOUSES—GROUP OF 40 SEMIDETACHED DWELLINGS, BUILT IN 1916 IN THE ANTHRACITE REGION.

The water-closet is in the basement (not shown). The combination fixture in the kitchen is used as a bath and laundry tub, as well as a sink.

been plastered on the inside has peeled off, and the paint both inside and outside has blistered in spots, evidencing the condensation and passing of moisture through the walls.

The roof is flat and is made of a concrete slab covered with slag roofing. Rain gutters and down spouts are provided. A small concrete slab is suspended over both front and back doors. Flower boxes are placed on either side of the front doors.

The plan (Fig. 44) of each dwelling is simple; there are three rooms downstairs and four upstairs. One of the latter was originally planned as a sleeping porch, but that feature was abandoned as not acceptable to the class of labor to be housed. There is a cellar under part of the house. The outside dimensions of each unit are 24 by 24 feet. Each house is equipped with a water system in the kitchen and a hot-water tank connected to a water back in the range. A combination laundry and bath tub is installed in the kitchen; this may also be used as a kitchen sink. The kitchen is of fair size and is used also as the dining room.

The outhouse is of concrete and contains both the toilet, with a concrete vault, and the coal bin.

These houses were erected in 1911–12 and cost $2,033 per family unit. The cost for improvements—grading and planting, drainage lines and piping for water system in kitchen, fencing, concrete walks, road work, electric light, etc.—cost about $456, which brings the cost of each dwelling, not including land, to $2,489. The outhouses cost in addition about $68.50 per dwelling.

The houses are rented only to English-speaking workmen. The rate is $12 a month, which is 5.6 per cent on the investment, not including cost of land. An additional charge of $1 a month is made for water.

Backyard wire fences are provided by the company; gardening is encouraged by giving prizes. The tenants maintain their own lawns. These were in excellent condition at the time of the agent's visit.

The interior of the house is not so attractive as the exterior. The concrete floors are chilling and uncomfortable. A broken stair coping remains broken, as it seems difficult if not impossible to repair it. No wall finish appears to last long on account of the dampness.

COMMUNITY B.

The same company which erected as an experiment the 40 concrete dwellings described also put up 40 semidetached dwellings of brick, furred and plastered inside, for the foremen of another of its mines. These houses were built along the curving brow of a hillside overlooking a rather picturesque valley. They are modern houses having

such improvements as a water-closet, and a combination fixture in the kitchen adaptable as a two-tray laundry tub, kitchen sink and drain board, and bathtub. The placing of the water-closet in the basement is rather an undesirable feature. The houses are steam heated. Each dwelling has a lot 40 by 150 feet.

These dwellings were erected in 1915–16, and each dwelling of seven rooms and a cellar, cost $1,635. The outside improvements for each dwelling, consisting of paving and street work, fencing, sewer, septic tanks, water piping, concrete sidewalk, trees and planting, amounted to $526, bringing the cost of each dwelling to $2,161. This is $396.50 less per dwelling than the cost of the concrete semidetached houses erected in 1911–12, which furnish the same amount of room space, but do not have steam heat and inside toilets as do the brick houses described.

The rent for the brick houses is $12 a month, which is 6.7 per cent on the investment, not including the cost of land.

Plans of these houses are shown in Figure 45. There are three rooms downstairs and four upstairs; closet space is provided. There are front and rear porches and rain gutter and down spouts, the latter a very unusual feature on company houses anywhere.

CHAPTER X.—NORTHERN IRON AND COPPER MINING REGION.

Scope of survey.—The northern iron and copper mining region, including the States of Michigan, Minnesota, and Wisconsin, has been taken as a unit because of the similarity of housing conditions prevailing in the district. Climatic conditions have undoubtedly determined this similarity, and availability of timber as material has led to the construction of frame houses only. The one-family house is the characteristic dwelling of the region. The company house, moreover, differs in no particular from the houses erected by individuals for their own use. A few log houses, however, are still in use by some of the copper-mining companies.

TABLE 63.—SCOPE OF HOUSING SURVEY IN THE NORTHERN COPPER AND IRON REGION, BY INDUSTRY GROUP.

Industry group.	Number of companies.	Number of establishments.	Number of employees.	Employees housed.	
				Number.	Per cent.
Copper mining	3	3	7,964	2,640	33.1
Iron mining	10	33	5,433	1,447	26.6
Total	13	36	13,397	4,087	30.5

The following table gives figures showing the extent of company housing in four of the iron-mining communities in Minnesota and Michigan:

TABLE 64.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED IN FOUR IRON-MINING COMMUNITIES—NORTHERN COPPER AND IRON REGION.

Community.	Number of employees.	Number housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	592	100	86	467	5.4
Community No. 2	587	156	98	496	5.1
Community No. 3	783	500	187	1,063	5.7
Community No. 4	1,067	370	158	725	4.6
Total	3,029	1,126	529	2,751	5.2

The company town.—In the copper and iron region of Minnesota, Wisconsin, and Michigan one model mining town (Fig. 4, p. 29) has been disclosed by the Bureau's survey, a town carefully laid out by a technical town planner, the streets, houses, and recreational facilities

of which were planned in advance to meet certain conditions of community life so far as these may be roughly forecast. This planned community is also interesting because of the introduction in it of the semidetached mine type of house so common in the Eastern coal fields and some of the iron and steel towns. Aside from the model town the other company towns in this region have grown up unplanned, much like other communities. The houses are of a type common in other towns and cities of the region—one-family, gable-roofed, frame dwellings, usually papered and plastered inside. Curiously enough all company houses throughout the region are painted some light or pale color—white, gray, or drab—as contrasted with the uniform dark red color of houses in the bituminous coal and coke region, for instance. Boardwalks and rail fences are characteristically common in the district. Streets are usually unpaved, though covered with iron-ore screenings or rock surfacing, which appears fairly satisfactory for the traffic over them.

The copper-mining towns are by no means isolated, but are located in an old and settled region near cities of over 5,000 population. (One of the copper companies included was organized in 1866.)

The iron-mining towns, somewhat more recent, are more isolated, but still along main lines of railroads and in the midst of a mixed timber and farming country. In the case of Minnesota, however, the iron-mining region is now centered around moderately populous cities. Throughout the region, therefore, community activities have not had to be provided so extensively by the companies, and educational facilities have been provided somewhat independently of company control. The chief element of company control has come through the ownership of the land, with a further weight resulting from being the principal taxpayers of the region as owners of most of the wealth upon which the economic life of the region is dependent.

Types of houses.—The houses are built as substantially as other houses in the region. They are sheathed, papered, and clapboarded on the outside and plastered and papered on the inside; roofs are of shingle with paper laid on the roof boarding. The houses for the most part are stove heated.

Size of dwellings.—The largest proportion of the dwellings (727, or 46 per cent) contain five rooms, and the next largest (259, or 16.4 per cent) six rooms. This is indicated in the following table:



FIG. 46.—MINERS' COTTAGES AND VILLAGE STREET IN NORTHERN MINNESOTA TOWN.

Three, four, and five rooms. Rent for $2 per room.



FIG. 47.—MINERS' COTTAGES IN NORTHERN MINNESOTA TOWN.

Three, four, and five rooms. Rent $2 per room.



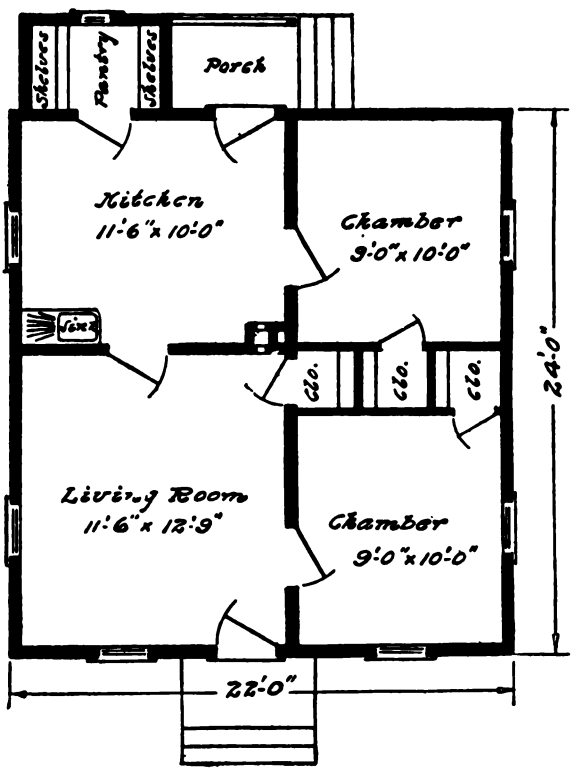


FIG. 48.—PICTURE AND PLAN OF TYPICAL 4-ROOM COTTAGE WITH WATER AND ELECTRIC LIGHT.

Cost before the war, $722; rent $8 per month.



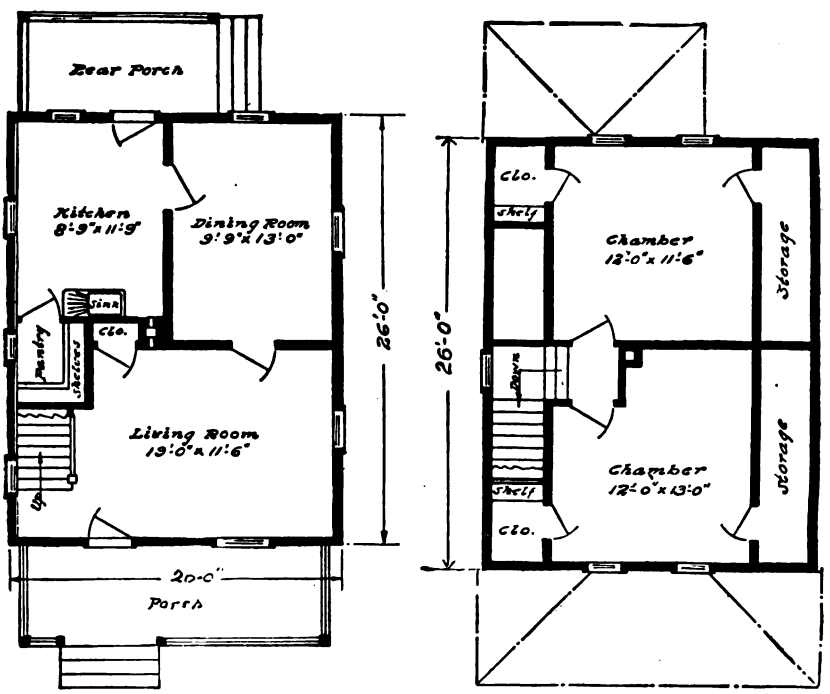


FIG. 49.—PICTURE AND PLANS OF TYPICAL 5-ROOM HOUSE WITH WATER AND ELECTRIC LIGHT.

Cost before the war, $930; rent $10 per month.

TABLE 65.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS, BY INDUSTRY GROUP—NORTHERN COPPER AND IRON REGION.

Size of dwelling.	Copper mining.		Iron mining.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
3 rooms			7	0.7	7	0.4
4 rooms			223	20.8	223	14.2
5 rooms	312	61.1	415	38.8	727	46.0
6 rooms	63	12.3	196	18.3	259	16.4
7 rooms	26	5.1	92	8.6	118	7.4
8 rooms	110	21.5	103	9.6	213	13.5
9 rooms and over			34	3.2	34	2.1
Total	511	100.0	[1] 1,070	100.0	[1] 1,581	100.0

[1] Not including 8 dwellings for which number of rooms was not reported.

Rent.—The situation as respects rent of company houses in the copper and iron mining region of Michigan, Wisconsin, and Minnesota discloses nothing new. More than half (52.3 per cent) of the company houses in the region are rented for less than $7 per month per dwelling, indicating the relatively low rentals charged.

The number and per cent of dwellings renting at each classified amount per month, by industry group, is shown in the following table:

TABLE 66.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—NORTHERN COPPER AND IRON REGION.

Classified amount of rent per month.	Copper mining.		Iron mining.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
$3 and under $4			29	2.7	29	1.8
$4 and under $5			70	6.5	70	4.4
$5 and under $6	191	37.4	208	19.4	399	25.2
$6 and under $7	147	28.8	182	17.0	329	20.8
$7 and under $8	37	7.2	118	11.0	155	9.8
$8 and under $9	70	13.7	167	15.6	237	15.0
$9 and under $10	62	12.1	35	3.3	97	6.1
$10 and under $11	4	.8	228	21.3	232	14.7
$11 and under $12			3	.3	3	.2
$12 and under $14			7	.7	7	.5
$14 and under $16			16	1.5	16	1.0
$16 and under $18			1	.1	1	.1
$18 and over			6	.6	6	.4
Total	511	100.0	[1] 1,070	100.0	[1] 1,581	100.0

[1] Not including 8 dwellings for which rent was not reported.

Table 67 shows, by industry group, the relation between the size of dwellings in the copper and iron region of the North and the amount of rent charged per month.

TABLE 67.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS, RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—NORTHERN COPPER AND IRON REGION.

Classified amount of rent per month.	Iron mining.							
	Dwellings having—							Total.
	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
	NUMBER.							
$3 and under $4	1	28						29
$4 and under $5	6	41	18	5				70
$5 and under $6		89	113	5		1		208
$6 and under $7		53	37	46	39		7	182
$7 and under $8			70	32	6		10	118
$8 and under $9		12	102	22	5	20	6	167
$9 and under $10			13	10		12		35
$10 and under $11			62	70	34	60	2	228
$11 and under $12					3			3
$12 and under $14					2	5		7
$14 and under $16				6	2	2	6	16
$16 and under $18							1	1
$18 and over					1	3	2	6
Total	7	223	415	196	92	103	34	[1] 1,070
	PER CENT.							
$3 and under $4	14.3	12.6						2.7
$4 and under $5	85.7	18.4	4.3	2.6				6.5
$5 and under $6		39.9	27.2	2.6		1.0		19.4
$6 and under $7		23.8	8.9	23.5	42.4		20.6	17.0
$7 and under $8			16.9	16.3	6.5		29.4	11.0
$8 and under $9		5.4	24.6	11.2	5.4	19.4	17.6	15.6
$9 and under $10			3.1	5.1		11.7		3.3
$10 and under $11			14.9	35.7	37.0	58.3	5.9	21.3
$11 and under $12					3.3			.3
$12 and under $14					2.2	4.9		.7
$14 and under $16				3.1	2.2	1.9	17.6	1.5
$16 and under $18							2.9	.1
$18 and over					1.1	2.9	5.9	.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	[1] 100.0

[1] Not including 8 dwellings for which data were not reported.

TABLE 67.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS, RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY INDUSTRY GROUP—NORTHERN COPPER AND IRON REGION—Concluded.

Classified amount of rent per month.	Copper mining.					Grand total.
	Dwellings having—				Total.	
	5 rooms.	6 rooms.	7 rooms.	8 rooms.		
	NUMBER.					
$3 and under $4						29
$4 and under $5						70
$5 and under $6	183	8			191	399
$6 and under $7	129	18			147	329
$7 and under $8		37			37	155
$8 and under $9			26	44	70	237
$9 and under $10				62	62	97
$10 and under $11				4	4	232
$11 and under $12						3
$12 and under $14						7
$14 and under $16						16
$16 and under $18						1
$18 and over						6
Total	312	63	26	110	511	[1] 1,581
	PER CENT.					
$3 and under $4						1.8
$4 and under $5						4.4
$5 and under $6	58.7	12.7			37.4	25.2
$6 and under $7	41.3	28.6			28.8	20.8
$7 and under $8		58.7			7.2	9.8
$8 and under $9			100.0	40.0	13.7	15.0
$9 and under $10				56.4	12.1	6.1
$10 and under $11				3.6	.8	14.7
$11 and under $12						.2
$12 and under $14						.5
$14 and under $16						1.0
$16 and under $18						.1
$18 and over						.4
Total	100.0	100.0	100.0	100.0	100.0	[1] 100.0

[1] Not including 8 dwellings for which data were not reported.

Table 68 contains data showing the number and per cent of dwellings renting at each classified amount per room per month, by industry group.

TABLE 68.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY INDUSTRY GROUP—NORTHERN COPPER AND IRON REGION.

Classified amount of rent per room per month.	Copper mining.		Iron mining.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
50 cents and under $1	8	1.6	119	11.0	127	8.0
$1 and under $1.50	503	98.4	604	56.1	1,107	69.7
$1.50 and under $2			267	24.8	267	16.8
$2 and under $2.50			78	7.2	78	4.9
$2.50 and under $3			7	.7	7	.4
$3 and under $3.50			1	.1	1	.1
$3.50 and under $4			1	.1	1	.1
Total	511	100.0	[1] 1,077	100.0	[1] 1,588	100.0

[1] Not including 1 dwelling for which rent per room was not reported.

Modern improvements.—So far as reported, modern sanitary improvements in company houses in the region are not very general. Thus, over three-fifths (312, or 61.1 per cent) of the 511 company dwellings in the copper country of Michigan have outside privies, and in the iron mining towns the same is true of 746, or 70.6 per cent, of the 1,057 for which such data have been reported.

Maintenance.—The towns of the iron and copper region of the Northwest are generally well maintained. All of the 13 companies make regular collections of garbage or trash for their tenants, some as frequently as every day in summer time and every week during the winter months. One company reports merely an annual clean-up day in its community. A large iron company in northern Minnesota has devised a systematic method of garbage and trash collection, has provided cans for its tenants and placed these in the alleys back of the houses on stands so elevated that the receptacle can be easily removed from a wagon without necessitating the driver's getting out of the wagon. (See Fig. 7, p. 30.) A large copper-mining company in Michigan has not laid out alleys in its community, and the result has been that tenants have placed their ash and trash barrels out in front of the houses, detracting much from the appearance of the community. (See Fig. 8, p. 30.)

Cost of maintenance.—Expenses for maintenance differ very considerably as between the companies in this region. One iron-mining company, for instance, has been able to maintain a very neat and attractive community at one of its mines, at the same time expending for maintenance only 20 per cent of its average annual rent receipts for a period of five years, while a large copper-mining company reports charges to maintenance for a similar period of years as 24 per cent in excess of its rent receipts for those years. Table 69 shows the relation between the average annual rent receipts (1911–1915) of the iron-mining company above mentioned and the average annual charges to maintenance and repairs covering labor and material only. The expenditures for street cleaning, garbage, and ash collection, and cleaning up of premises are not included, a fact which explains the unusually low proportion of the rent receipts charged to maintenance.

TABLE 69.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (LABOR AND MATERIAL FOR REPAIRS ONLY) OF ONE IRON-MINING COMPANY IN MICHIGAN, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$16,803.66	$2,563.89	15
1912	16,915.45	4,396.46	26
1913	16,712.13	2,036.33	12
1914	16,783.41	2,688.20	16
1915	16,330.49	4,876.58	30
Average	16,709.03	3,312.29	20

The next table shows the relation between the average annual rent receipts of an iron-mining company in Minnesota and the charges to maintenance, which, in addition to labor and materials for repairs, include also general upkeep, cleaning up of premises, and garbage and sanitary collection. The inclusion of all these items accounts for the larger proportion of the rent receipts absorbed by charges to maintenance.

TABLE 70.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (LABOR AND MATERIALS FOR REPAIRS, GARBAGE, AND SANITARY COLLECTION) OF AN IRON-MINING COMPANY IN MINNESOTA, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$9,436.50	$2,335.14	25
1912	12,524.61	4,136.07	33
1913	9,389.86	3,925.88	42
1914	10,092.78	9,686.73	96
1915	10,608.31	10,109.98	95
Average	10,410.41	6,038.76	58

Tables 71 and 72 show the relation between the rent receipts and expenditures for maintenance of two copper-mining companies. In the first instance the company charged to its maintenance account only labor and material for repairs and consequently only 26 per cent of its rent receipts were required to meet those charges. The company represented in the second table charged to the maintenance account expenditures for labor, supplies, lumber, etc., teaming work, water, garbage collection, remodeling and replacing of premises, and insurance.

TABLE 71.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (LABOR AND REPAIRS ONLY) OF ONE COPPER-MINING COMPANY IN MICHIGAN, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$15,391.58	$3,968.56	26
1912	15,500.72	4,035.51	26
1913	14,385.00	4,443.89	31
1914	15,320.22	4,046.02	26
1915	17,518.05	3,988.66	23
Average	15,623.11	4,096.53	26

TABLE 72.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE (LABOR AND MATERIAL, WATER, GARBAGE, AND SANITARY COLLECTION) OF ONE COPPER-MINING COMPANY IN MICHIGAN, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$69,721.61	$107,195.93	154
1912	70,635.41	98,519.32	139
1913	72,876.69	74,029.76	102
1914	72,599.04	75,073.44	103
1915	72,540.76	86,243.17	123
Average	71,674.70	88,810.32	124

From data relating to 628 dwellings, cost of which amounts to $692,409, it appears that the rents fixed for these dwellings indicate a gross return of 9.3 per cent of the amount invested. The amount invested includes only the cost of the dwellings, exclusive of land, and furthermore the annual rent receipts are calculated as though all the houses were rented during the entire year. This is, however, a fairly safe assumption as very rarely are company houses vacant, so great is the demand for them. The data are given in Table 73:

TABLE 73.—RELATION OF RENTAL TO THE COST OF HOUSES (NOT INCLUDING LAND) OF IRON-MINING COMPANIES IN MICHIGAN, WISCONSIN, AND MINNESOTA.

Company and type of house.	Number of dwellings.	Cost of dwellings.	Annual rent.	
			Amount.	Per cent of cost.
Company No. 1:				
Detached, frame	135	$207,840	$15,484	7.9
Semidetached, frame	2	4,400	264	6.0
Company No. 2: Detached, frame	41	60,021	4,536	7.6
Company No. 3: Semidetached, frame	96	79,200	9,216	11.6
Company No. 4: Detached, frame	353	340,948	33,960	10.0
All companies combined:				
Detached, frame	530	608,809	54,960	9.0
Semidetached, frame	98	83,600	9,480	11.3
Total	628	692,409	64,440	9.3

CHAPTER XI.—METAL-MINING REGION OF THE SOUTHWEST.

In this region the Bureau's survey covered only six communities—two in Colorado, two in Arizona, and one each in Wyoming and New Mexico. None of these communities were more than 18 years old. The most recent is a model town begun in 1914.[1]

The ruggedness of the country makes town planning difficult, yet in two instances town planning has been made use of. The thoroughfares are unpaved roads; this, however, is not very objectionable, as the region is comparatively dry the year round. The streets are quite clean and well kept.

Scope of survey.—Altogether there were employed at these six establishments or companies 5,398 men, of whom 857, or 15.9 per cent, were in company houses. Those in company houses were almost exclusively technical and office men and skilled mechanics. The unskilled labor, mostly Mexican, is not housed by the companies in this region except in one—the model town above mentioned—where houses are provided for a small proportion of this class of labor.

The following table gives figures showing the extent of company housing in five of the communities studied:

TABLE 74.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED—METAL-MINING REGION OF THE SOUTHWEST.

Community.	Number of employees.	Number housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	1,200	235	183	505	2.8
Community No. 2	2,500	80	80	273	3.4
Community No. 3	225	8	8	33	4.1
Community No. 4	290	290	107	505	4.7
Community No. 5	922	230	43	160	3.7
Total	5,137	843	421	1,476	3.5

Types of houses.—The houses are prevailingly two or four room cottages or bungalows; 3.5 is the average number of rooms to each dwelling. Actually they may be said to be larger than this because of the prevalence of porches, which are practically additional rooms, since they are screened in and used for sleeping purposes. The typical bungalow is of frame, clapboarded directly on the frame, and plastered or ceiled inside. Double roofs made to create an air

[1] A detailed description of this model town, located in New Mexico, was given in the September, 1918, issue of the Monthly Labor Review of the Bureau of Labor Statistics (pp. 278-283).

space and thus keep the houses cool in the hot summer months are very common. What is termed an "Arizona bungalow" is frequently made of tongue-and-groove material laid up and down on the inside of the framework of the cottage. This makes a bungalow look rustic and, when painted the prevailing gray, not at all inartistic. In the extreme heat which prevails gray paint seems to last better than paint of any other color.

Many of the cottages are of extremely light construction, such as might be used in seashore cottages. Cellars are uncommon. Stove or grate heating is the rule; and over two-fifths (44.2 per cent) of the houses have modern sanitary plumbing in them, for, as noted, company houses in this region are occupied only by the better-paid technical and office men and the skilled mechanics.

Rent.—Rent in this region includes water, and three companies also furnish electric light as a part of the rental; one company also includes garbage collection as a part of the rent charge. Of the 612 dwellings for which rent is reported, 70, or 11.4 per cent, rent for less than $6 a month, and 87, or 14.2 per cent, for $18 and over per month. The largest number (109, or 17.8 per cent) rent for between $10 and $11 a month. Further details as to rentals are set forth in Tables 75 and 76:

TABLE 75.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—METAL-MINING REGION OF THE SOUTHWEST.

NUMBER.

Classified amount of rent per month.	Dwellings having—						Total.
	1 room.	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	
$5 and under $6	13	57					70
$6 and under $7		105					105
$8 and under $9		12	4	50			66
$9 and under $10		16	12	25			53
$10 and under $11	96	1	7	4	1		109
$11 and under $12			13		1		14
$12 and under $14			50		2		52
$14 and under $16		5	7	9	4	7	32
$16 and under $18			9	9	1	5	24
$18 and over			16	46	24	1	87
Total	109	196	118	143	33	13	[1]612

PER CENT.

$5 and under $6	11.9	29.1					11 4
$6 and under $7		53.6					17.2
$8 and under $9		6.1	3.4	35.0			10.8
$9 and under $10		8.2	10.2	17.5			8.7
$10 and under $11	88.1	.5	5.9	2.8	3.0		17.8
$11 and under $12			11.0		3.0		2.3
$12 and under $14			42.4		6.1		8.5
$14 and under $16		2.6	5.9	6.3	12.1	53.8	5.2
$16 and under $18			7.6	6.3	3.0	38.5	3.9
$18 and over			13.6	32.2	72.7	7.7	14.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not including 30 dwellings for which rent was not reported.

TABLE 76.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—METAL-MINING REGION OF THE SOUTHWEST.

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.											Total
	$5 and under $6.	$6 and under $7.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	Not reported.	
Detached, frame:												
2 rooms	3	9		16	1			1				30
3 rooms			4		7	13	46	5		9		84
4 rooms			50	25	4			9		38	11	137
5 rooms					1	1	2	4	1	11		20
6 rooms								7	5	1		13
Detached, brick:												
3 rooms									9			9
4 rooms										11		11
Detached, adobe: 4 rooms									9			9
Detached, hollow tile:												
3 rooms							4			3		7
4 rooms										8	4	12
5 rooms										2	2	4
Semidetached, adobe: 2 rooms	54											54
Semidetached, hollow tile:												
2 rooms			12					4				16
3 rooms				12				2		4		18
4 rooms											2	2
Row, frame: 1 room					96							96
Row, tile:												
2 rooms [1]		96										96
4 rooms [2]											11	11
Total	57	105	66	53	109	14	52	32	24	87	30	[3] 629

[1] Specially designed 6-family house.
[2] Specially designed 3-family hillside house.
[3] Not including 13 one-room dwellings.

Cost of construction.—The details as to costs of construction of thoroughly modern tile and stucco houses built in a company town in New Mexico are set forth in a special article in the Monthly Labor Review for September, 1918 (pp. 278–283). The small frame bungalow characteristic of the region, made of one thickness of tongue-and-groove material, costs approximately $1,000, including inside modern plumbing, but without a cellar. Plans, with statements as to costs, are shown for two types of dwellings in Figures 50 and 51.

Administration.—The housing work of the companies in this region is made part of the general business. Rent is deducted monthly from wages.

Maintenance.—The towns of the region are far better maintained than the average coal-mining town of the East. Four of the six communities provide and maintain fences for the tenants. Garbage is collected daily in one community, semiweekly in one, and weekly in one. Special receptacles are provided for it. Only one of the communities, however, provides can privies instead of vault privies.

Conditions in the Mexican sections of the towns are distinctly inferior to conditions in the American quarters. Mexican laborers

lease land from the companies and build their own "shacks" of waste lumber, box materials, and scraps of corrugated iron. Many, too, build adobe houses. The houses are crowded close together as a rule, space being greatly limited in the small valleys and defiles of a rugged country. Yards and streets are not so scrupulously policed as in the American quarter.

On account of the isolation of the towns the employees are entirely dependent upon the companies for measures relating to community recreation and health. It is claimed, however, that in spite of that fact there is a considerable shifting of labor in the region. It is principally to stabilize this shifting labor that the companies are giving more attention to housing. One company pointed out that by controlling housing the employer can keep out the agitator among the employees.

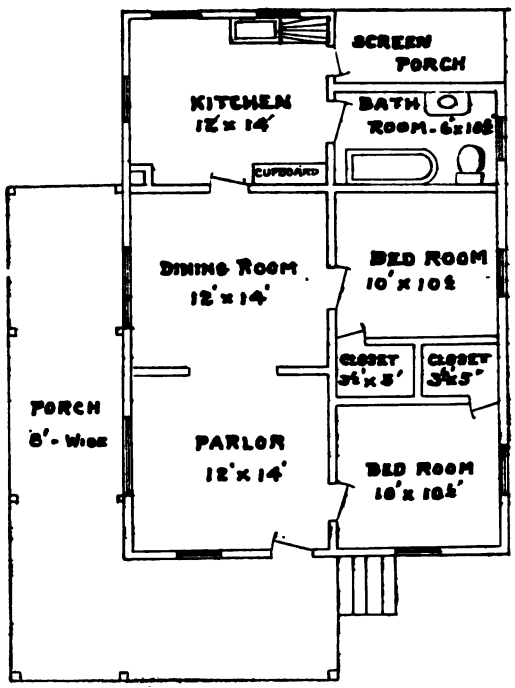


FIG. 50.—BETTER-CLASS FRAME HOUSE OF AN ARIZONA COPPER COMPANY.

Plastered; modern sanitary equipment. Cost, in 1913, $1,862; rent $26.50 per month. Note poor location of bathroom.

Cost of maintenance.—As to the financial side of their housing work only two companies were able to give satisfactory and comparable data. The company designated as A in Table 77 had invested $206,778 in houses and improvements (lighting, street surfacing, etc., and drainage and sewer construction) and company B had similarly invested $85,340. Charges to maintenance here do not include taxes, insurance, and depreciation. After the average charges for maintenance during the five-year period (1912–1916) had been deducted from rent receipts for a similar period, company A showed a sum ($15,174.56) sufficient to return a net 7.3 per cent on the housing investment, not including land, and during a four-year period (1912–1915) company B showed a sum ($934.93), sufficient to net 1.1 per cent.

Company A spent 48 per cent of its rent receipts for maintenance and upkeep, including garbage and sanitary collection, furnishing of water and light, and street cleaning, while company B spent 93 per

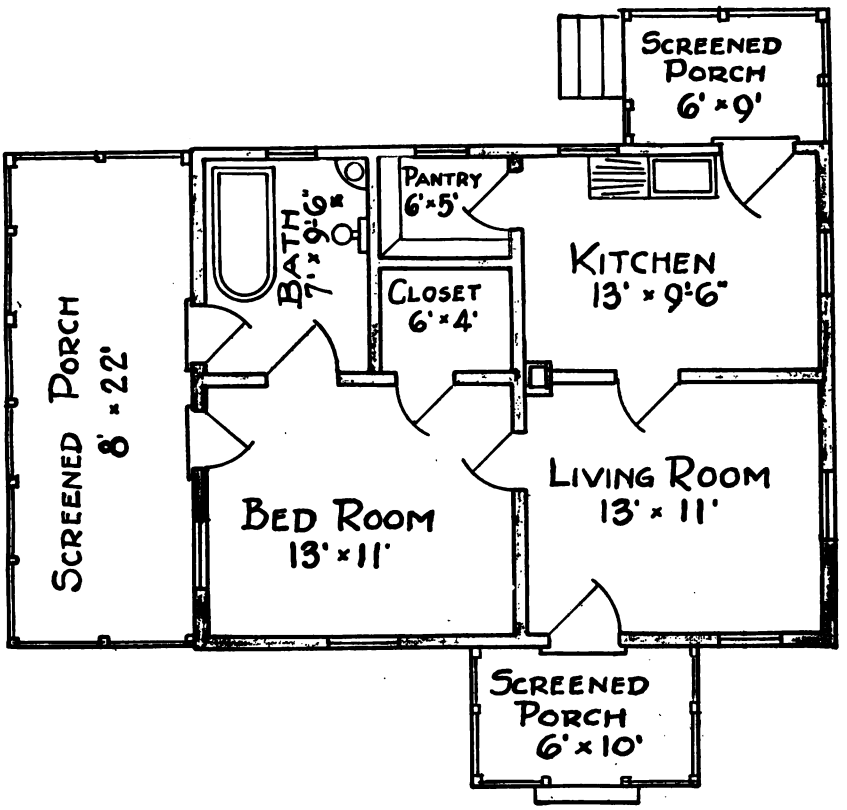


FIG. 51.—BETTER CLASS 3-ROOM BRICK COTTAGE.

Concrete foundation, plastered, modern sanitary improvements, stove heated. Cost in 1916, about $1,500; rent $13.50 per month.



FIG. 52.—HOUSES IN MEXICAN VILLAGE ON COMPANY LAND.
Note hilly location. Note receptacle for rubbish in front of house.



FIG. 53.—CHARACTERISTIC HILLSIDE HOUSES IN MEXICAN VILLAGE IN SOUTHWESTERN COPPER-MINING TOWN.

cent; the average for both companies is 57 per cent. The table showing details by years follows:

TABLE 77.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF ONE COPPER COMPANY IN ARIZONA AND ONE IRON-MINING COMPANY IN COLORADO.

Company and year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
Company A:			
1912	$26,360.92	$6,344.76	24
1913	29,363.85	13,157.05	45
1914	27,839.14	11,576.13	42
1915	30,055.44	16,515.62	55
1916	31,082.66	21,235.66	68
Average	28,940.40	13,765.84	48
Company B:			
1912	13,717.75	11,684.63	85
1913	13,840.75	15,806.53	114
1914	13,668.73	12,422.96	91
1915	11,848.95	7,991.85	67
Average	13,450.39	12,515.46	93
Companies A and B combined:			
1912	40,078.67	18,029.39	45
1913	43,204.60	28,963.58	67
1914	41,507.87	23,999.09	58
1915	41,904.39	24,507.47	58
Average	41,673.88	23,874.88	57

CHAPTER XII.—NEW ENGLAND TEXTILE TOWNS.

Company housing in New England has an especial interest because of its historical connection. Some of the large present-day cities of New England were originally company towns founded by business interests which saw the possibilities of water power for manufacturing purposes. Paterson, N. J., founded by a company organized by Alexander Hamilton,[1] is an instance of this kind.

In Massachusetts the cities of Lawrence, Lowell, Ludlow, and Waltham are examples of early company-organized towns, "the ownership of extensive real-estate holdings being a not unusual feature of early industrial organizations in New England." [2] Lowell dates from about 1820, when the group of proprietors who controlled power and land sites at Waltham began quietly to buy up the farms at the locality desired. The farms were bought secretly one by one, in the name of the agent of the founders, until about four farms were purchased, conveying about 400 acres of land.[3]

The first houses established by the mill owners were boarding houses, occupied principally by unmarried employees, although some families were accommodated in them. Multiple tenements or barrack dwellings were also constructed.

Senator Benton, of Missouri, in 1857 refers in glowing terms to these "large, stately, elegant houses," having parlors as well furnished as similar rooms for Congressmen in Washington. He comments also on the cleanliness of the kitchen and its arrangements.

An earlier observer, on the other hand, writing in 1846, states that on the average, the young women slept six in a room, three beds to a room, that privacy was lacking, and that some of these boarding houses did not even provide tables on which to write.[4] A later observer, in 1849, confirmed to some extent the above statement of conditions, and noted the lack of closet and shelf space and the smallness of the rooms, with a consequent lack of pure air under the crowded conditions prevailing.[5]

A spirit of extreme paternalism prevailed. Elaborate rules were formulated regarding the coming and going of tenants, their conduct, and social pleasures.[6] Church attendance was required of the tenant

[1] Clark, Victor S.: History of Manufactures in the United States, 1607 to 1860, Washington, Carnegie Institution, 1917, p. 387.

[2] Idem, p. 405.

[3] Lowell: A City of Spindles (Lowell, Trades and Labor Council, 1900), p. 22.

[4] The Harbinger, Nov. 14, 1846. (Reproduced in Commons' Documentary History of American Industrial Society, vol. 7, p. 366.)

[5] Lowell Offering, May, 1849, p. 100.

[6] Dr. Bartlett's Vindication (Lowell Offering, Dec., 1843, p. 47).

employees. The following regulations for the boarding house of the Hamilton Manufacturing Co.[7] may be cited as of historical interest. The boarding houses, it may be observed from the regulations, were let to third parties by the company, which exercised control over rates and conditions in the houses.

The tenants of the boarding houses are not to board, or permit any part of their houses to be occupied by any person, except those in the employ of the company, without special permission. They will be considered answerable for any improper conduct in their houses, and are not to permit their boarders to have company at unreasonable hours. The doors must be closed at 10 o'clock in the evening, and no person admitted after that time, without some reasonable excuse. The keepers of the boarding houses must give an account of the number, names, and employment of their boarders, when required, and report the names of such as are guilty of any improper conduct, or are not in the regular habit of attending public worship. The buildings and yards about them must be kept clean and in good order; and if they are injured otherwise than from ordinary use, all necessary repairs will be made, and charged to the occupant. The sidewalks, also, in front of the houses, must be kept clean, and free from snow, which must be removed from them immediately after it has ceased falling; if neglected, it will be removed by the company at the expense of the tenant. It is desirable that the families of those who live in the houses, as well as the boarders (all employees are required to be vaccinate d—see rules of company) who have not had the kinepox should be vaccinated, which will be done at the expense of the company, for such as wish it. Some suitable chamber in the house must be reserved, and appropriated for the use of the sick, so that others may not be under the necessity of sleeping in the same room.

Of the six companies taken by the Bureau as representative of New England textile companies which house their employees to any extent one dates from 1835, while the remaining five were founded at various times—1838, 1848, 1857, 1860, and 1909, respectively.

Of the houses included in the survey two-thirds were constructed before 1910, and 250, or 38.5 per cent, were constructed between 1906 and 1910. It is significant that even the semidetached and row houses date from an early period, and apparently are not a modern development resulting from dear land.

TABLE 78.—NUMBER OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, BY YEAR OF CONSTRUCTION—NEW ENGLAND TEXTILE TOWNS.

Year of construction.	Detached, frame.	Semidetached.			Row.		Miscellaneous.		Total.
		Frame.	Brick.	Other.	Frame.	Brick.	Frame.	Brick.	
Before 1881	3	24	8		18	65			118
1881–1890		2				10		24	36
1891–1900						28			28
1901–1905									
1906–1910	64	62		10	36	42	36		250
1911		36							36
1914				24					24
1915								36	36
Not reported	34	28			9		50		121
Total	101	152	8	34	63	145	86	60	649

[7] Handbook to Lowell (1848), pp. 45, 46. (From Commons' Documentary History of American Industrial Society, 1910, vol. 7, p. 137.)

SCOPE OF SURVEY.

The present housing survey in the New England textile region covered only six communities controlled by as many companies, five located in Massachusetts and one in Rhode Island. These companies employed 10,624 operatives and of that number housed 2,047, or 19.3 per cent.

Data furnished by four companies show that the average number of employees secured per dwelling house is 3.2. One company has a rule requiring three employees from each house or dwelling; if the average falls below that the tenant must take boarders. This is community No. 3 in the table below. This company secures 5.3 employees per dwelling.

TABLE 79.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED—NEW ENGLAND TEXTILE TOWNS.

Community.	Number of employees.	Number housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	750	197	119	847	7.1
Community No. 2	1,200	120	48	248	5.2
Community No. 3	1,815	1,200	227	1,605	7.1
Community No. 4	6,500	300	176	894	5.1
Total	10,265	1,817	570	3,594	6.3

THE COMPANY TOWN.

There is a general prevalence of contour planning in these little communities, and very considerable regard is had for the use of trees and vegetation as elements of beauty. In some instances, however, the streets are unnecessarily wide and lack both gutters and sidewalk.

The towns of these companies are generally well maintained; lawns are quite prevalent, and the presence or absence of fences seems to make little difference in the securing of sightly premises. Where fences have been provided they are of the picket type. The immigrant unskilled labor section of the towns here, as is generally the case elsewhere, is decidedly less neat and orderly than the other parts where the higher-paid labor force is housed. In one community where no fences had been provided in the Italian quarter the tenants have erected their own fences, using waste material. In this section those front yards which have no fences have not been cared for.

In one community it was stated that the houses had been kept in good repair until several years ago, when the class of employees changed from English and French to Polish, at which time repair and upkeep became greatly neglected. These houses are now badly in need of paint. (Fig. 54.) Another company built un-



FIG. 54.—EARLY TYPE OF COMPANY HOUSES IN NEW ENGLAND COTTON-MILL COMMUNITIES.

Four-family rows. Few trees and no grass. Houses need paint.



FIG. 55.—EARLY TYPE OF DETACHED BRICK HOUSE IN NEW ENGLAND COTTON-MILL COMMUNITIES, WITH FENCE AND YARD.



FIG. 56.—SEMIDETACHED HOUSES IN NEW ENGLAND COTTON COMMUNITY.

Built in 1906 at cost of $1,891 per dwelling unit. Six rooms and cellar, inside closets, and running water. Thirty-two rent at $5 per month, and 8, having bath also, at $6.

sightly frame rows at the time of a strike several years ago in order to accommodate families of Italian operatives. In these rows the toilets have been placed in the interior of the house and are without outside windows and without ventilation. Overcrowding has also been fostered, as indicated by the relatively higher rents in some of the Italian rows, making it probable that the tenants take boarders to help out with the rent. Thus in one row the rent for a six-room dwelling is only $5.25 a month, and in another row the rent for a dwelling similar in every way is $8.75 per month.

TYPES OF HOUSES.

There is more than the ordinary variety in housing in New England textile towns, as shown in the fairly uniform distribution among the different types of houses—detached, semidetached, and row. The semidetached and the row houses predominate.

TABLE 80.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED TYPE—NEW ENGLAND TEXTILE TOWNS.

Type of dwelling.	Number of dwellings.	Per cent of total.
Detached	101	15.6
Semidetached	194	29.9
Row	208	32.0
Flat, apartment, and other	146	22.5
Total	649	100.0

Most of the houses are of frame construction—402, or 61.9 per cent of the total; 213, or 32.8 per cent, are brick; and only 34, or 5.2 per cent, are of varying combinations of stucco on frame or brick veneer on frame, etc.

SIZE OF DWELLINGS.

The company dwellings of the New England textile mills are larger than the average for company dwellings as a whole, excepting only those in the anthracite-coal region of Pennsylvania. The average size as shown for the dwellings of five of the six companies included is 5.2 rooms per dwelling. Data from five companies show that the largest proportion of company houses have six rooms, the distribution being as follows:

TABLE 81.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS—NEW ENGLAND TEXTILE TOWNS.

Size of dwelling.	Number of dwellings.	Per cent of total.
3 rooms	12	1.8
4 rooms	55	8.5
5 rooms	155	23.9
6 rooms	209	32.2
7 rooms	108	16.6
8 rooms	20	3.1
9 rooms and over	90	13.9
Total	649	100.0

RENT.

The variety in the quality and character of the houses is strikingly brought out in the wide dispersion of the dwellings among different classified amounts of rent. No great proportion of the dwellings is found in any particular rental group. Thus the greatest proportion shown in any rental group is 15.7 per cent, found in two instances—namely, in the groups "Under $3 per month" and "$5 and under $6 per month."

The distribution of dwellings according to classified amount of rent per month is shown in Tables 82 and 83, Table 82 showing rent per dwelling by number of rooms per dwelling, and Table 83 rent per month according to the type of the dwelling.

TABLE 82.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—NEW ENGLAND TEXTILE TOWNS.

NUMBER.

Classified amount of rent per month.	Dwellings having—							Total.
	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms or over.	
Under $3	12	3	23	10	54			102
$3 and under $4			1					1
$4 and under $5		4	23	9	9	2	2	49
$5 and under $6			35	48	14	2	3	102
$6 and under $7			5	19	8	2	18	52
$7 and under $8				21	10	3	35	69
$8 and under $9				6	6	8	17	37
$9 and under $10			2		5		4	11
$10 and under $11		40	26			1	7	74
$11 and under $12			8	2	1		1	12
$12 and under $14		8	32	18			1	59
$14 and under $16				12			1	13
$16 and under $18				52		1		53
$18 and over				12	1		1	14
Total	12	55	155	209	108	19	90	[1] 648

PER CENT.

Under $3	100.0	5.5	14.8	4.8	50.0			15.7
$3 and under $4			.6					.2
$4 and under $5		7.3	14.8	4.3	8.3	10.5	2.2	7.6
$5 and under $6			22.6	23.0	13.0	10.5	3.3	15.7
$6 and under $7			3.2	9.1	7.4	10.5	20.0	8.0
$7 and under $8				10.1	9.3	15.8	38.9	10.6
$8 and under $9				2.9	5.6	42.1	18.9	5.7
$9 and under $10			1.3		4.6		4.4	1.7
$10 and under $11		72.7	16.8			5.3	7.7	11.4
$11 and under $12			5.2	1.0	.9		1.1	1.9
$12 and under $14		14.5	20.6	8.6			1.1	9.1
$14 and under $16				5.7			1.1	2.0
$16 and under $18				24.9		5.3		8.2
$18 and over				5.7	.9		1.1	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not including 1 dwelling for which rent was not reported.

TABLE 83.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—NEW ENGLAND TEXTILE TOWNS.

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.														Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Detached, frame:															
4 rooms	2				1								52	12	66
6 rooms			1		1									1	2
7 rooms				2	1	3	3		1				1		11
8 rooms							1	3	4						8
9 rooms						1				1		1		1	4
10 rooms				1			3								4
11 rooms									1						1
13 rooms			2												2
14 rooms															
Total	2		3	3	3	4	7	3	6	1		1	53	14	100
Semidetached, frame:															
4 rooms			4												4
5 rooms	20							2							22
6 rooms			2	34	8					2					46
7 rooms	54		4		3	4	5			1					71
8 rooms							5								5
9 rooms				2		2									4
Total	74		10	36	11	6	10	2		3					152
Semidetached, brick:															
6 rooms				2											2
7 rooms							1	2							3
9 rooms											1				1
12 rooms									2						2
Total				2			1	2	2		1				8
Semidetached, brick veneer: 6 rooms	10														10
Semidetached, frame, stucco:															
4 rooms											8				8
5 rooms									8		8				16
Total									8		16				24
Row, frame:															
5 rooms			20	21											41
6 rooms			6	4			6								16
7 rooms			3					3							6
Total			29	25			6	3							63
Row, brick:															
4 rooms									34						34
5 rooms					1					8					9
6 rooms				8	10	21									39
9 rooms					5										5
10 rooms						10	28	10							48
12 rooms					3			1							4
15 rooms						3	2								5
17 rooms							1								1
Total				8	29	52	13	1	34	8					145
Two-flat, frame:															
5 rooms	1	1	1												3
7 rooms				6											6
8 rooms			2		1										3
Total	1	1	3	6	1										12
Two-flat, semidetached, brick:															
5 rooms				8	4										12
7 rooms				8	4										12
Total				16	8										24

TABLE 83.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—NEW ENGLAND TEXTILE TOWNS—Concluded.

Type and size of dwellings.	Number of dwellings renting at each classified amount per month.														Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Apartment, frame:															
3 rooms	12														12
4 rooms	1								6						7
5 rooms	2		2	6					18						28
6 rooms											18				18
7 rooms			2			6									8
10 rooms						1									1
Total	15		4	6		7			24		18				74
Apartment, brick:															
5 rooms											24				24
6 rooms												12			12
Total											24	12			36
Grand total	102	1	49	102	52	69	37	11	74	12	59	13	53	14	[1] 648

[1] Not including 1 dwelling for which monthly rental was not reported.

The rents charged per room per month for dwellings of each type and material of construction are as follows:

TABLE 84.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—NEW ENGLAND TEXTILE TOWNS.

Type of dwelling and material of construction.	Number of dwellings renting at each classified amount per room per month.								Total.
	Under 50 cents.	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$4 and under $5.	
Detached, frame	4	15	13	2	1	53		12	100
Semidetached:									
Frame	74	47	26	5					152
Brick		4	4						8
Brick veneer	10								10
Frame, stucco					8	8	8		24
Row:									
Frame		33	30						63
Brick	4	67	32		8	34			145
Two flat, frame		12							12
Two flat, semidetached, brick		12	12						24
Apartment:									
Frame	8	12	12		36	6			74
Brick						36			36
Total	100	202	129	7	53	137	8	12	[1] 648

[1] Not including 1 dwelling for which rent per room was not reported.

The rent charged by five of the companies covers only the use of the house and water; one company does not report on this point. Three companies also include garbage collection as a part of the service furnished. In three communities the local municipal authorities provide for garbage collection.

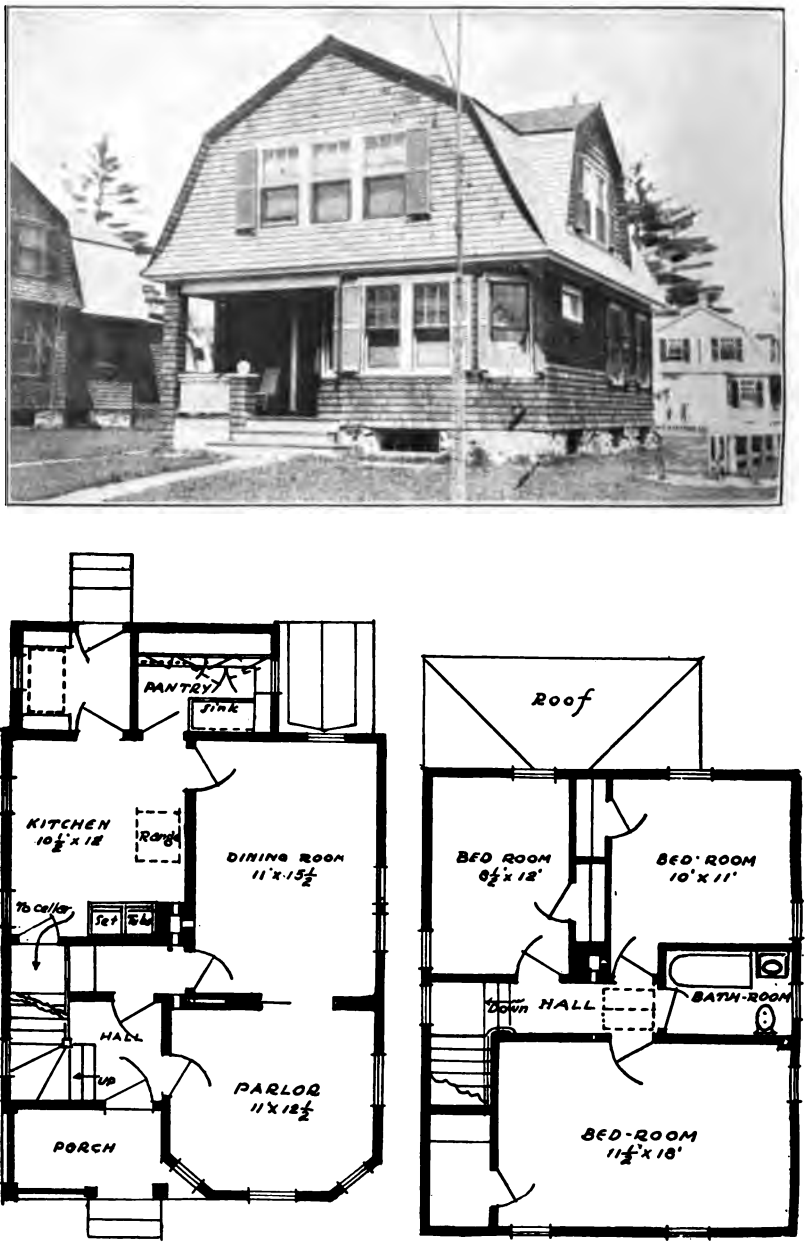


FIG. 57.—PICTURE AND PLANS OF BETTER-CLASS COMPANY HOUSE IN NEW ENGLAND.

Electric light; stove heat. Rent, $16.50 per month. Lot, 50 by 105 feet.

MODERN IMPROVEMENTS.

A very inconsiderable percentage of the 643 dwellings for which information has been secured are without some or all present-day sanitary conveniences. Only 19, or 3 per cent, are dependent upon outside vault privies, while 242, or 37.6 per cent, have all the conveniences of a three-piece bathroom, running hot and cold water, and electric lighting, and an additional 188, or 29.2 per cent, have water-closet, sewer or cesspool, running water inside, and lights, while 56, or 8.7 per cent, have water-closet, sewer or cesspool, and running water inside. Of the total number, 213, or 33.1 per cent, are without electric lights.

TABLE 85.—NUMBER AND PER CENT OF DWELLINGS HAVING SPECIFIED SANITARY EQUIPMENT—NEW ENGLAND TEXTILE TOWNS.

Sanitary equipment.	Number of dwellings.	Per cent of total.
Bath, water-closet, sewer or cesspool, water system, and gas or electric light	242	37.6
Bath, water-closet, sewer or cesspool, and water system	9	1.4
Water-closet, sewer or cesspool, running water inside, and gas or electric light	188	29.2
Water-closet, sewer or cesspool, running water inside	56	8.7
No modern conveniences except running water inside	129	20.1
No modern conveniences (outside privies)	19	3.0
Total	[1] 643	100.0

[1] Not including 6 dwellings for which data are not reported.

COST OF CONSTRUCTION.

With one exception the six textile establishments included in this part of the Bureau's survey either refused or were unable to furnish any useful information as regards the cost of their houses.

The company which has reported the cost of its tenements has erected none but multiple houses, three groups of semidetached "two-flatters" housing four families in each group, and two groups of apartment houses, each four stories high and containing four families on each floor. Plans are shown for one of the "two-flatter" groups constructed of stucco on frame. (Figs. 58 and 59.) The houses are plastered and painted, not papered, inside. The cost per family unit in this group was $1,063, or $213 per room, at the time of construction in 1914. Each family has a five-room unit having all the modern improvements except heating equipment other than a stove. The arrangement of the interior can not be said to be desirable since the bath is located off the kitchen and is not conveniently accessible from the bedrooms. The parlor is rather small, having only an area of 99⅔ square feet—about the minimum for a standard bedroom. The second-floor plan is identical with that of the first floor. The rent of these tenements is $13 per month per family.

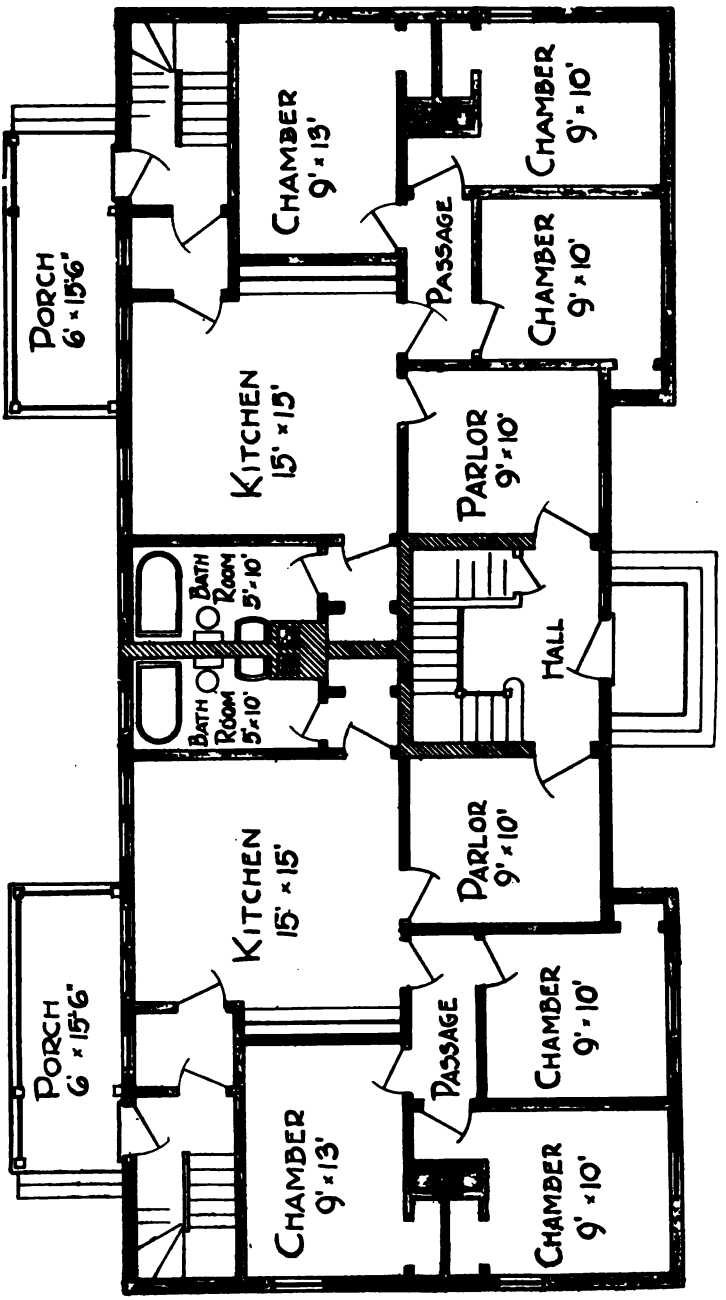


FIG. 58.—FIRST FLOOR PLAN OF 4-FAMILY HOUSE ERECTED BY A COTTON-MILL COMPANY IN NEW ENGLAND.

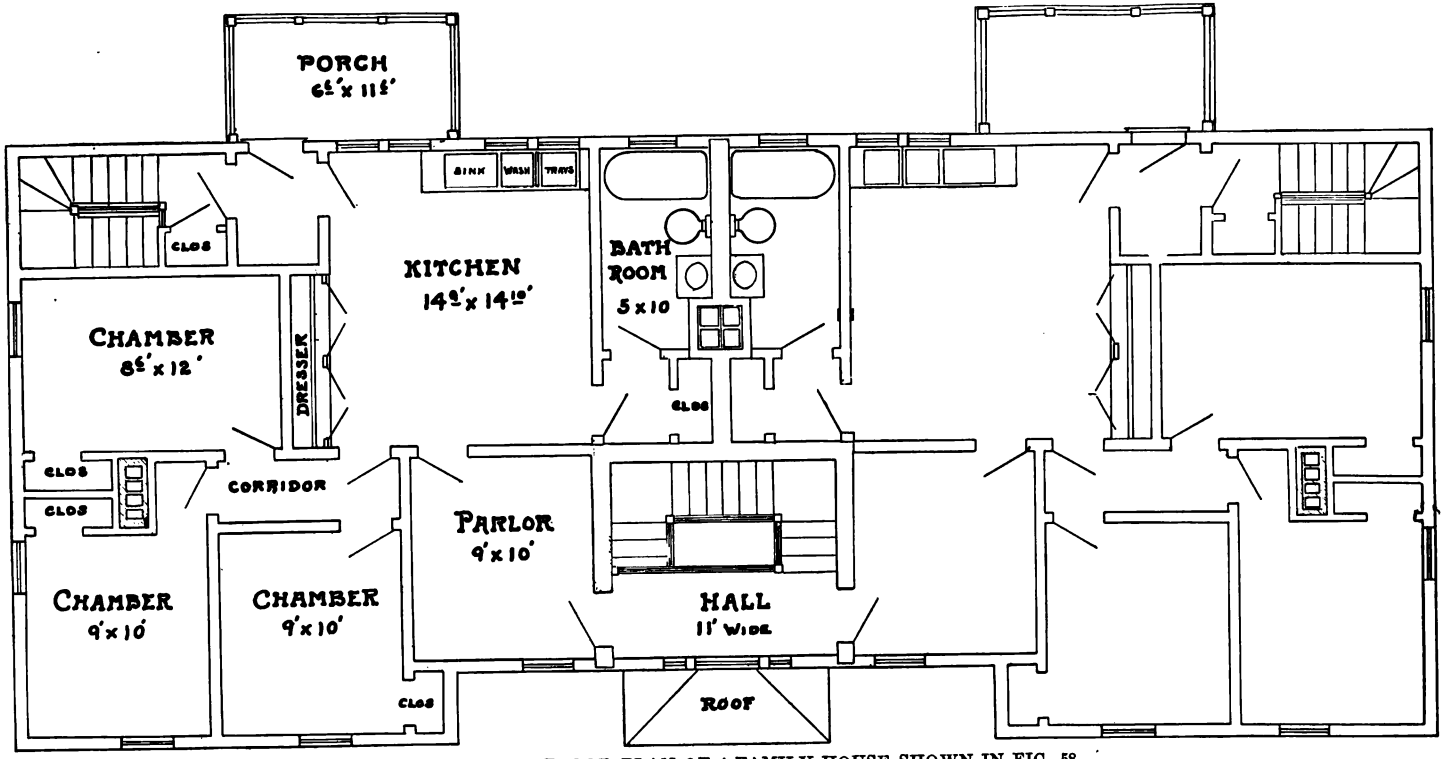


FIG. 59.—SECOND-FLOOR PLAN OF 4-FAMILY HOUSE SHOWN IN FIG. 58.

The cost and rentals of this and other tenements of this company are indicated in the table below. All have three-piece bathrooms for each family, but are stove heated. Storage space for each family is provided in the cellar.

TABLE 86.—COST AND RENTALS OF THE TENEMENT DWELLINGS OF A CERTAIN COTTON MILL IN NEW ENGLAND.

Type of dwelling.	Number of dwellings.	Year of construction.	Number of rooms per family.	Cost of construction.		Rent per week.
				Per dwelling.	Per room.	
Semidetached "two-flatter," 2-story stucco on frame	4	1914	5	$813	$163	$2.50
Do	4	1914	5	1,063	213	3.00
Do	4	1914	4	975	244	3.00
Apartment, 4-story, 4 families each floor, brick	16	1915	5	2,375	475	3.00
Do	16	1915	(1)	(2)	446	(3)

[1] Eight apartments have 5 rooms per suite and 12 have 6 rooms.
[2] The 5-room apartments average $2,232 and the 6-room $2,679.
[3] The 5-room apartments rent at $3 and the 6-room at $3.60 per week.

To house its unskilled labor, this company has remodeled a school building into a five-family tenement containing two 5-room apartments, two 7-room apartments, and one 9-room apartment. The sanitary accommodations consist of a water-closet placed in a small compartment at the rear of each apartment, and a sink with running water in the kitchen. It may be noted that the halls are used in common by the several families; the central halls are without direct light and ventilation except for a glass scuttle, about 26 by 30 inches in the roof.

Each apartment is larger than the average dwelling provided for raw immigrant labor as a rule. This fact very probably encourages the taking of roomers beyond a desirable number, since an examination of the rent list shows over five employees to each apartment or dwelling.

ADMINISTRATION AND MAINTENANCE.

Two of the companies covered carry on housing as a special department of their business, while with the remaining four companies housing is an integral part of their main business.

Rent is collected weekly in four of the six communities and semimonthly and monthly in the other two. In all instances rent is deducted from the pay of the operative. In three instances collection is deferred in case of the sickness of the employee or in time of shutdown of the mills. Rent here includes only use of house and water.

Regular garbage collection is made in three cases by the companies themselves and in an equal number of instances by the local city authorities.

Two of the companies encourage gardening, one by assisting in the maintenance of a horticultural society. This society has a greenhouse and the company has furnished various kinds of flowers and shrubs.

COST OF MAINTENANCE.

Two companies report both annual rent receipts and the expenditure for maintenance over a period of five years. In the case of one company, which, in addition to ordinary repairs and maintenance, garbage and ash collection, and insurance, also charged to the maintenance account the expense of upkeep and electric power for the water plant supplying the houses, these charges amounted to 73.6 per cent of the rent receipts during the five-year period 1911 to 1915. In the case of the second company, whose charges to maintenance were similar to the above except as respects garbage collection, which in this case is performed by the local municipality, and maintenance and power for a water plant, the maintenance charge for the five-year period 1911 to 1915 was 49.1 per cent. The details, by years, are shown in the tabulation following, each company being shown separately because of the difference in their respective accounts.

TABLE 87.—RELATION OF CHARGES FOR MAINTENANCE, REPAIRS, ETC., TO RENT RECEIPTS OF TWO NEW ENGLAND COTTON MILLS, 1911 TO 1915.

Year.	Rent receipts.	Charges to maintenance, repairs, etc.	
		Amount.	Per cent of rent receipts.
Establishment No. 1: [1]			
1911	$12,007	$8,897	74.1
1912	15,750	12,362	78.5
1913	13,260	11,337	85.5
1914	13,960	9,265	66.4
1915	12,932	8,150	63.0
Average	13,582	10,002	73.6
Establishment No. 2: [2]			
1911	20,561	9,590	46.6
1912	20,392	12,703	62.3
1913	20,299	9,873	48.6
1914	19,758	8,706	44.1
1915	19,784	8,646	43.7
Average	20,159	9,904	49.1

[1] Maintenance includes all charges for repairs and maintenance, garbage and ash collection for tenants, maintenance and electric power for water system supplying houses and insurance, but not taxes.
[2] Maintenance includes all charges for repairs and maintenance, street cleaning, ash collection for tenants (the city collects the garbage) and insurance, but not taxes.

CHAPTER XIII.—SOUTHERN COTTON-MILL VILLAGES.[1]

By the early thirties of the nineteenth century, power spinning and some factory weaving—probably on hand looms only—were established in the South, but the real development of cotton manufacturing in that section may be said to date from 1846, when William Gregg, in association with Charleston capitalists, established at Graniteville, S. C., the finest, and probably at that time the largest, factory south of Mason and Dixon's line. Mr. Gregg had familiarized himself with the methods of the great corporations of Lowell, Mass., and his operatives, all native whites, "were housed, shepherded, and schooled in a comfortable village, with welfare institutions, on the Lowell plan." This enterprise was followed almost immediately by the digging of a power canal at Augusta, Ga., 10 miles distant, and there even larger factories were built. Before the middle of the century the manufacturers of the South added sheetings and other coarse cloths to their yarn shipments to New York and Philadelphia, and the product of the Southern mills became mainly sheetings, shirtings, and drillings, as that of the New England mills had been for a decade after the close of the war of 1812.[2]

The growth of manufacturing in the cotton-growing States was not particularly rapid at first (in 1860 New England had nearly 14 spindles for every one in the South), but the industry has made great strides within more recent years and South Carolina now stands next to Massachusetts in the number of spindles.

In the housing of its people, as in the product of its looms, the southern cotton mill is to-day where its northern competitor was in the first and second generations of its existence. In the North the operatives have largely gotten away from company control of living conditions, due, among other factors, to the higher wages received for the finer classes of work done in the North, which enables them to live in other than company houses.

Of the 10,609 dwellings covered in this study the date of construction was reported for 7,480. Of the latter number, 7.3 per cent were built before 1881, 12.4 per cent were built from 1881 to 1890, 35.1 per cent were built during the next decade, and 28.5 per cent during 1901–1910. One thousand and ninety-eight (about 15 per cent) were built in 1916 or early in 1917, about two-thirds of them

[1] This chapter was written by Miss Elizabeth A. Hyde, of the Bureau.

[2] Clark, Victor S.: History of Manufactures in the United States, 1607-1860, Carnegie Institution of Washington, 1916, pp. 540, 542, 557, 558.

in the latter period, due to the actual or anticipated increase in the demand for cotton goods of various kinds.

Before 1881 more brick row dwellings were built, for use singly or as flats, than either detached or semidetached frame houses. Since that time, however, almost no brick rows have been erected, in the present study none whatever being reported as built since 1890. Only 24 dwellings in frame rows are listed among the 10,609 houses.

During the decade 1891 to 1900, one-third of the houses erected were semidetached frame houses; fewer of this class were built during the years following until 1916 and 1917, when somewhat more than one-third were of the two-family type.

On the subject of the two-family house it may be stated that the leading contractors advocate its abandonment, and the best of the new enterprises visited were putting up considerable numbers of single-family bungalows. Where new two-family houses were reported by the better mills inspection generally showed that they were adapted to meet the needs of newly married couples or small families, requiring only two or three rooms. They follow the prevailing and convenient custom of having one or more connecting doors so that they can be thrown into one dwelling for the use of larger households. The best two-family houses are of superior construction. The statement was made by a contractor in March, 1917, that to make soundproof the wall between two 3-room dwellings added approximately $30 to the cost. This simple expedient does away with one of the tenant's greatest objections to the semidetached house.

The following table shows the date of construction of the different kinds of houses:

TABLE 88.—NUMBER OF DWELLINGS OF EACH SPECIFIED TYPE AND MATERIAL OF CONSTRUCTION, BY YEAR OF CONSTRUCTION.

Year of construction.	Detached.			Semidetached.			Row.		Miscellaneous.		Total.
	Frame.	Brick.	Other.	Frame.	Brick.	Other.	Frame.	Brick.	Frame.	Brick.	
Before 1881	147		1	120	6		8	119	98	48	547
1881 to 1890	668			244						18	930
1891 to 1900	1,693	4		898			13		14		2,622
1901 to 1905	980			200					23		1,203
1906 to 1910	879			52							931
1912	20										20
1913	121			8							129
1916	162			222							384
1917	544			170							714
Not reported	2,144	36	26	794	56	2	3	6	62		3,129
Total	7,358	40	27	2,708	62	2	24	125	197	66	10,609

SCOPE OF SURVEY.

Of the 48 southern cotton mills scheduled in the present study 12 are in North Carolina, 11 in South Carolina, 12 in Georgia, 9 in Alabama, and 3 in Tennessee. One Delaware mill is included here because its conditions resemble those of the South rather than of the New England group. Between 15 and 20 other mill communities were visited; at least one-half of these were of more than average interest and are excluded from the statistical study only because of important omissions or defects in the schedules.

In regard to the danger of drawing conclusions from so limited a survey, the following, compiled from the State industrial reports, is of importance: The mills investigated in Georgia comprised only 8.8 per cent of the cotton mills in the State as reported in 1915, but their employees comprise 31.3 per cent of all the cotton mill employees; the mills visited in North Carolina constitute about 3.9 per cent of all the mills, but their employees are about 13.3 per cent of all the employees; and the mills visited in South Carolina constitute 6.6 per cent of all the mills, but their employees are 14.6 per cent of all the employees.

The 48 establishments scheduled in this study employed at the time of the investigation a total of 35,643 persons, and of these 25,289, or 71 per cent, were housed by the employing companies. Twenty-eight of the mills housed more than 80 per cent of their workers, 19 housed 90 per cent or more, 12 housed 95 per cent or more, and 6 housed all.

The following table shows figures as to the housing done by six mills:

TABLE 89.—NUMBER OF EMPLOYEES HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED BY SIX MILLS—SOUTHERN COTTON-MILL VILLAGES.

Mill and location.	Number of employees housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Mill No. 1 (South Carolina)	700	332	1,265	3.8
Mill No. 2 (Alabama)	700	265	1,211	4.6
Mill No. 3 (South Carolina)	275	117	455	3.9
Mill No. 4 (Alabama)	275	75	300	4.0
Mill No. 5 (North Carolina)	624	311	1,169	3.8
Mill No. 6 (Tennessee)	625	308	1,139	3.7

Remarks made at some of the mills visited indicate that the number of hands a family can supply for the mill is still a factor in determining the allotment of housing accommodations. This condition is, of course, closely bound up with the question of child labor.

In three cases the mill-village population is reported. All three are mills on the outskirts of cities. No. 1 houses 1,500 persons in 878 rooms, equivalent to 0.59 room per person and 1.7 persons per

room; No. 2 houses 3,431 persons in 2,638 rooms, or 0.77 room per person and 1.3 persons per room; No. 3 houses 1,000 persons in 465 rooms, or 0.47 room per person and 2.15 persons per room.

The last mentioned was one of the worst cases seen. Eighty new four-room bungalows are largely used by two households each; the three-room houses in many cases contain more than one family; and the 10-room tenements (five-room semidetached houses, but "so cut up by families that we call them tenements") are occupied each by a number of households, one noted by the agent housing a total of 30 or more persons. This company is said to be building constantly in an effort to do away with this crowded condition. However, it is one of the three companies reporting the rule that a family must provide one hand for each room.

Even where the rule of one employee per room does not obtain and where experienced welfare workers are making every effort to raise the standards of living, it is said that some families still sleep all in one room "as they did in the mountains." The opposite practice of using all rooms for sleeping purposes, results in a condition also deplored by social workers in the mill communities, since the young people have no sitting room in which to entertain guests.

It is true of most cotton-mill villages in the South, as it is of the average mining or iron and steel community, that their isolated location necessitates the providing of houses for the employees. Situated with a view to the availability of power and the cheapness of land, mills generally are constructed at a distance from towns, and housing accommodations for the working force are as necessary a feature as the mill itself.

This results, unavoidably, as things are at present, in the undemocratic system of company control, which has played so large a part in certain notorious industrial disturbances.

The consensus among the agents who conducted this investigation agrees with that of a study made by the Bureau of Labor Statistics in 1907 and 1908, namely, that living conditions in the typical cotton-mill villages compare very favorably with those in other industrial communities housing a similar or comparable class. Living conditions alone are under consideration, the evils of long hours, low wages, and deleterious working conditions having no part in the present study.

The following is an extract from the report of the earlier investigation:[3]

In a number of villages conditions are reported as excellent and superior to those in the surrounding country. The consensus of the different reports indicates clearly that the mill companies take more and greater sanitary precautions than usually are

[3] Report on Condition of Woman and Child Wage-Earners in the United States, vol. 1, Cotton Textile Industry, Washington, Government Printing Office, 1910. (Sen. Doc. 645, 61st Cong., 2d sess.)

taken in the average village or on the average farm * * * [p. 535] * * * while the housing accommodations are far from being ideal among cotton-mill operatives, if they are compared with those prevailing among other laboring people having about the same income, it is found that they are at least not inferior, and the rents are lower. The sanitary conditions prevailing among cotton-mill operatives, especially in the South, are generally better than the average among other laboring people [p. 536].

It may be questioned whether it is best in the long run for the development of the people to have the amount done for them that is done by the mill companies in some of the villages. Still there can be no question that the present living conditions are much better in the villages of this type than in many of the larger towns where mills are located. The people in such villages usually enjoy more comfort and convenience and the provisions made by the mill companies for the educational and moral uplift of the community are in some instances equal or superior to the facilities afforded to the citizens of incorporated towns in the same section of country where the companies do not exercise control [p. 538].

The isolated location of the village is one cause of the evil of overcrowding, since the housing activities of the company do not always keep pace with an increase in spindleage or the erection of an additional mill. The best employers anticipate such a condition, and several of the communities visited in 1917 were putting up scores of new houses in preparation for the influx of labor due to the increased activity in the industry. Quite commonly the oldest employees are given the preference in the allotment of new houses; not infrequently, however, they ask to be allowed to stay in the houses they have occupied for years and to which they are accustomed. Where a shortage of houses exists the families are compelled to take boarders or to occupy fewer rooms, both of which are resented by all but the least desirable among the workers.

In cotton manufacturing, as in other industries, where the factory is near a town or city, some employees prefer to live outside of the mill community, and in spite of the cheaper rents in the village and the long hours of work go back and forth each day. The mills visited at Augusta and Columbus, Ga., Knoxville, Tenn., and some other places of considerable nonmill population, house a comparatively small part of their working force; but two companies at Columbia, S. C., and Atlanta, Ga., despite the fact that their properties are actually or practically within the city limits, house 85 and 60 per cent, respectively, of their employees.

THE MILL VILLAGE.

Except for the dominating mill, the general appearance of the more common type of village is not very unlike that of a mining or steel town, with its rows of small houses of the same design and size, the unimproved streets and gutters and walks, the struggling young trees, the absence from the streets of vehicles, children, and dogs. Almost invariably in the mill village, however, there are one or more churches, a substantial school building, a good-sized store, and the

better homes of the mill officials. A community cottage for welfare activities, a moving-picture hall, a playground, and a park are becoming more and more common.

The topography of the mill villages is described as level, entirely or partly hilly, and entirely or partly rolling in about equal proportions of the cases. In 28 cases the checkerboard plan of laying out the streets was used in part or exclusively; in 16 cases all streets follow the contour of the site.

Various reasons were given for following the checkerboard instead of the contour plan which lends itself to variety and picturesqueness and does not result in the monotony of row on row of houses: To economize space; to be more convenient and to facilitate the layout; to follow the plan of cities; to give each house the same size of lot.

In no instance had any preliminary housing survey been made, other than the necessary consideration of the probable number of persons to be housed, and the segregation of Negroes. As a general rule the mill occupies a commanding position and the houses are clustered about it as closely as practicable, the employees generally, it is said, preferring the houses that are nearest the mill.

In 25 of the 48 communities the company laid out a whole town, in 12 a subdivision, and in 9 a suburb. One mill built on lots already laid out, and one did not report on this subject.

In only 10 of the 48 villages was the average width of the streets less than 40 feet; in 13 it was 40 to 49 feet, and in many it was 55 or more, being as much as 90 in one or two cases. Thus narrow thoroughfares can not be said to be a feature of cotton-mill towns. Ordinarily there is plenty of ground and it is laid out liberally. In one case of reconstruction the new houses have been built between the old ones, the lots being of such generous widths that building operations were conducted without difficulty.

In spite of a number of examples of excellent road work, both in old and in new communities, the average village street is little more than a country road, except in the matter of gutters, which ordinarily are deep and well cared for. In perhaps one-fourth of the places visited the streets were excessively muddy, impassable except at crossings and in a number of cases impassable there.[4] In all the better villages, efforts are being made, with sand, clay, or other topping, to improve the roads. Macadam streets were reported in two cases. The walks are of sand, clay, gravel, occasionally asphalt or cement, but more generally cinders. Miles of stone curbing are being put in.

Grass and trees at the sides or in the middle of the streets are reported in only about one-third of the cases.

[4] The survey of this region was made during the first three months of 1917.



FIG. 60.—COTTON-MILL VILLAGE IN SOUTH CAROLINA. DETACHED FRAME COTTAGES.



FIG. 61.—AN UNUSUALLY WELL-KEPT COTTON-MILL VILLAGE IN TENNESSEE.

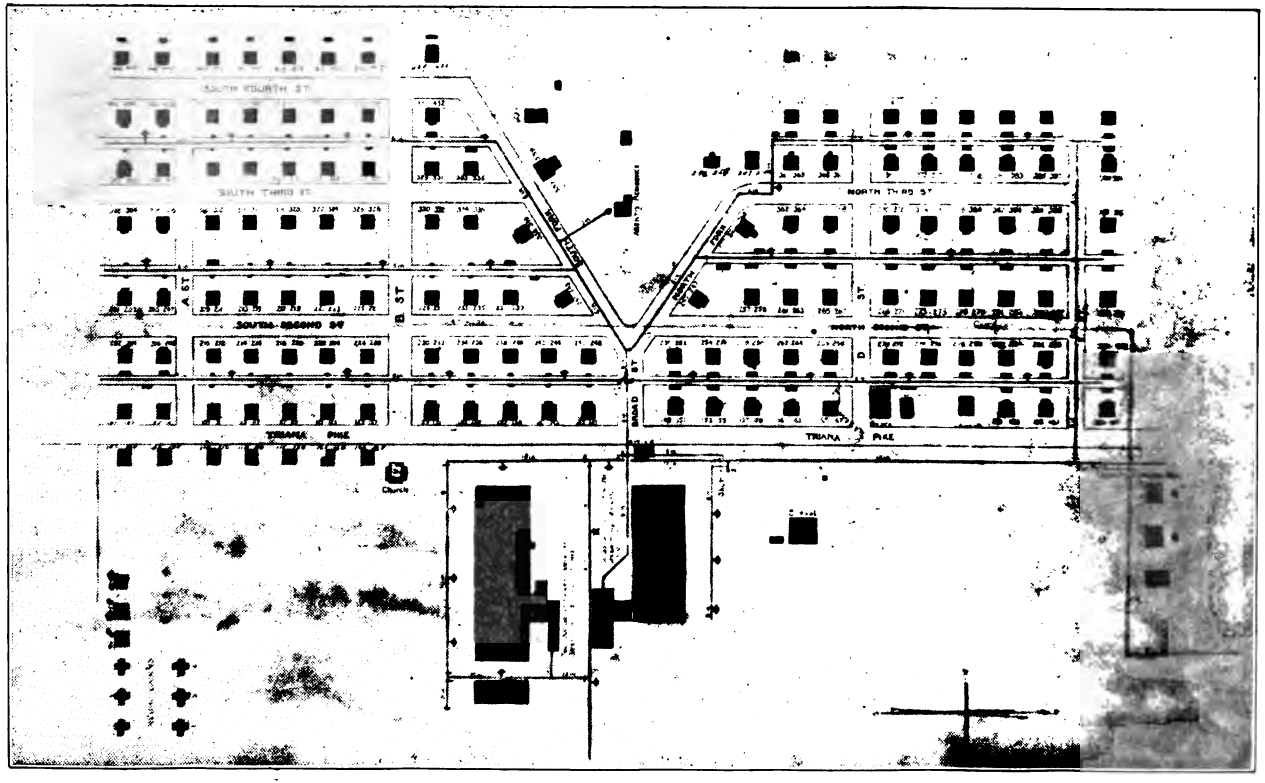


FIG. 62.—LAYOUT OF TYPICAL SOUTHERN COTTON-MILL VILLAGE.

Young trees set out for the purposes of shade or fruit or both are reported in one-fourth of all cases, their distribution as to location between lot and walk and between walk and road being about equal. Large trees line the streets in some of the older villages; one company was uprooting, by machine, fine grown trees that were to be planted elsewhere under direction of the landscape gardener. In one-half of the schedules no mention is made of trees, or they are reported as few or none. Complaint of damage was voiced by a number of the officials giving information; young trees quite commonly are guarded by boxes, though vehicles in mill villages are comparatively few.

Where the community has electricity for mill or residence purposes, the streets usually have an occasional arc light, and in the best villages the lighting is adequate.

Functions ordinarily a part of the municipal government are necessarily performed by the employing companies in isolated communities. Of the 48 mill villages reporting in the present study, the only examples of other than company provision are where the mill is actually or practically within the city limits. Such being the case, it is perhaps not surprising to find that of the 48 villages 18 have no sanitary sewers (and many more, naturally, no sewer connection in the operatives' houses), 25 no storm sewers, 20 no paving, 15 no sanitary rules, 41 no gas, 10 no electricity, 35 no hospital, and 18 no playground. The companies acknowledge their responsibility for street cleaning, street lighting, garbage and other sanitary collection, and fire and police protection. The county, in many cases assisted by the company, provides for the schools. Company support of kindergarten and night schools is quite common. The people, in most cases assisted by the company, provide and maintain their churches.

TYPES OF HOUSES.

Almost all of the mill-village houses are of frame, only 3 per cent of all reported being of other materials. The 293 brick houses are confined to four of the communities visited, and 191 of them are in one city in Georgia.

The prevailing type of three-room house has two rooms at the front, with chimney between and an L at the rear, with a somewhat primitive smoke pipe. The four-room house is almost invariably "square, or approximately so, with one central chimney providing for fires in all rooms or a chimney between the front and back room on each side."

Each of the 48 companies reports some or all of the houses as weatherboarded. Three companies erecting houses of various types are using shingle or other novelty siding with pleasing effect. In

two cases somewhat inferior houses, such as Negro quarters, are of board and batten or boxed, and in one old village visited, but not included in the tabulation, practically all the dwellings are so constructed.

Fifteen of the companies report all roofs as shingle; eight report some tin and some composition roofing. In four cases a compo-

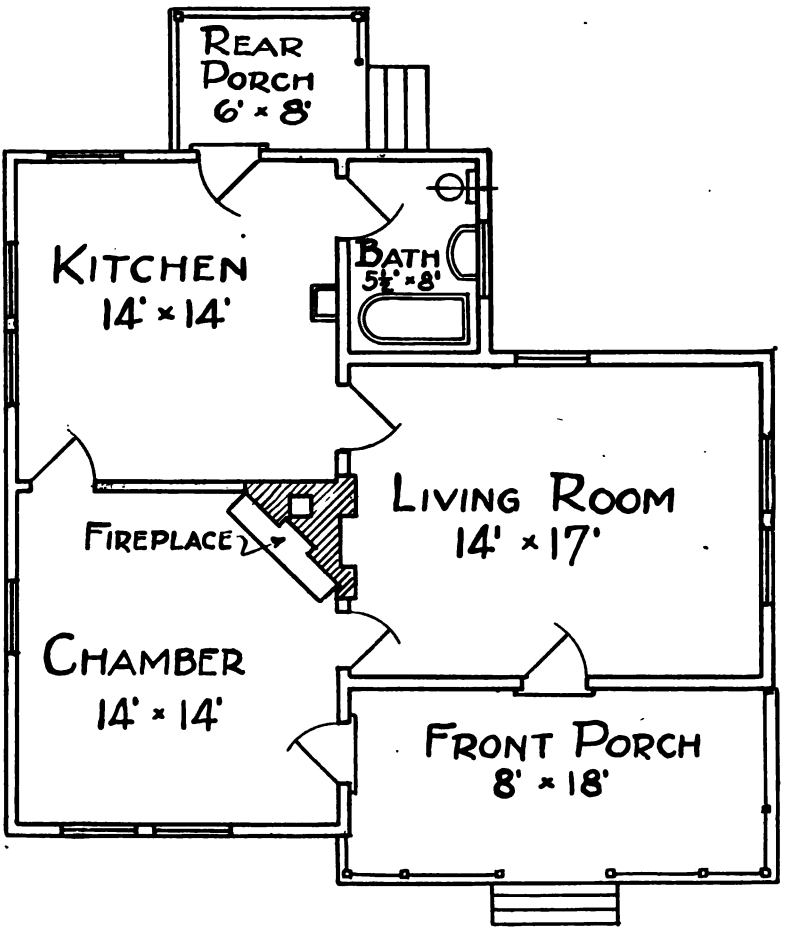


FIG. 63.—PLAN OF 3-ROOM BUNGALOW ERECTED BY A COTTON-MILL COMPANY IN SOUTH CAROLINA.

sition roofing such as fiber tile, fiber shingle, Neponset rubber, or imitation slate is being used.

In comparatively few cases is the space between ground and first floor inclosed by lattice or boarding, though such addition contributes largely to the good appearance and somewhat to the warmth of the house. Where tenants use the uninclosed area beneath the house for discarded trash or the storage of fuel, the result is very

unsightly, especially if the ground is uneven and some of the supporting piers are several feet in height.

In only 20 cases are porches mentioned, but this feature is so general that probably it was overlooked in reporting instead of being

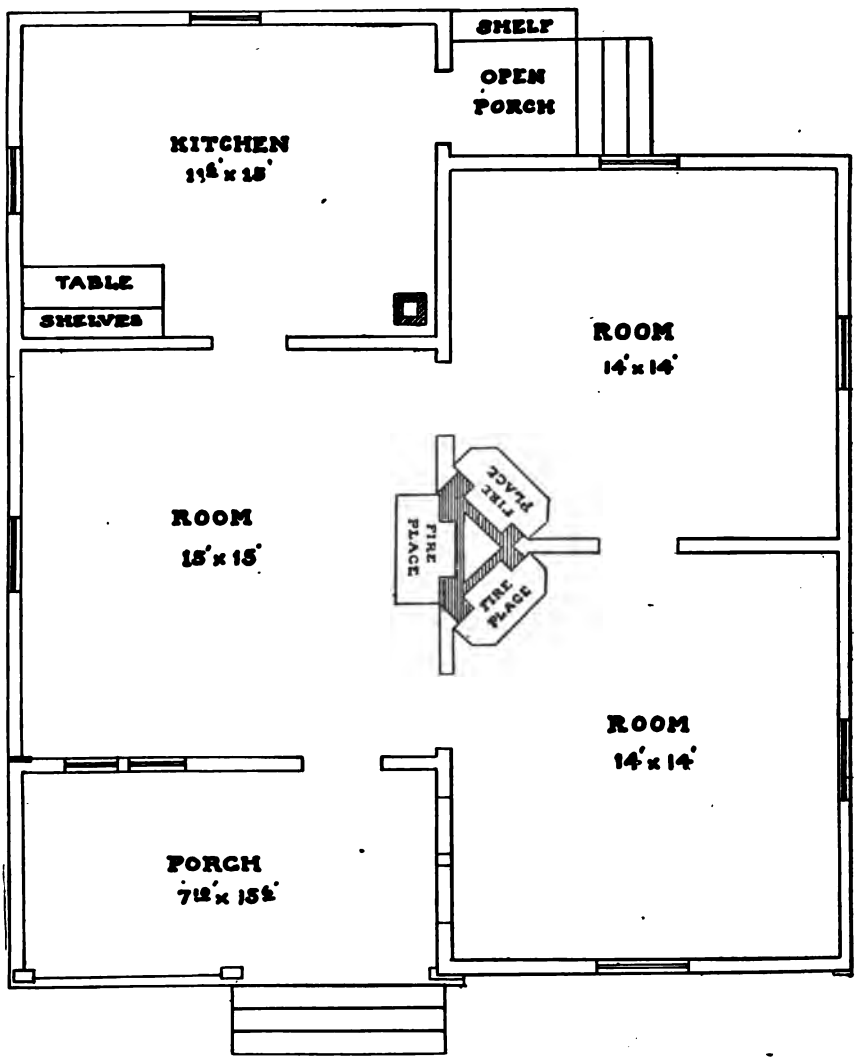


FIG. 64.—PLAN OF TYPICAL SOUTHERN COTTON-MILL FRAME COTTAGE.

Thirty erected in 1907, on lots 50 x 170 feet, at an average cost of $1,100, not including land. Each contains 4 rooms, and rents for $5 per month. Grate heat.

absent. Outside blinds are not often provided. Four of the companies report that they supply screens free and five others that they install them at cost. In one case the householder bears 60 per cent of the cost of screens and the company bears 40 per cent.

Of 36 mills reporting on the exterior finish of their houses, 17 say that they are painted a variety of colors, 3 that one color with a contrasting trim is used, and 16 mention only one color, in most cases white. Only six schedules speak of the alternation of style or color of house to prevent monotony, but in many other cases the roofs differ in color where the walls do not, affording a pleasing variety. As described elsewhere in this report (p. 28), a row of detached houses all of one type may be made to appear of several styles by facing them in different ways.

In 11 cases the houses are ceiled inside, in 14 plastered, in 17 some are ceiled and some plastered, in the remaining 6 paper or beaver board is used. Two have double doors for warmth, and one makes special mention of lined walls.

In the better villages and the better houses of most villages closet space is provided between rooms or beside a chimney. In some cases every room has such provision. One official remarked as to the exceptional fact that even his new houses had no closets, that this gave "less chance to hoard trash." If sincere and not an excuse for their accidental or economical omission from the plans, this was a sad commentary on his mill people, since the fact that closet room makes decent housekeeping easier is incontrovertible.

Ordinarily the employing company supplies grates for the fireplaces but does not provide the cookstove.

In one village the new type of house happens to have very narrow stairs, turning back on themselves after a small landing, and because of the impossibility of getting bedsprings and such pieces around the bend it has been left open between the two flights.

SIZE OF DWELLINGS.

As appears from Table 90, the four-room dwelling is the most common of the 10,609 dwellings covered by the survey, 4,585, or 43.2 per cent, having four rooms. The three-room house follows, forming 20.4 per cent of the total number of dwellings. Among the 7,358 detached frame dwellings those of three and four rooms predominate, forming 26.7 and 50.9 per cent, respectively.

RENT.

Of the 10,609 houses reported upon, the monthly rental of 2,655 (25 per cent) is less than $3; of 2,970 (28 per cent), $3 but less than $4; and of 2,893 (27.3 per cent), it is $4, but less than $5. Thus 8,518 houses, or 80.3 per cent of all, cost their tenants less than $5 a month for rent. Of these 8,518 dwellings, 3,981 (46.7 per cent) have four rooms and 3,003 (35.3 per cent) have three rooms.

TABLE 90.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT OF RENT PER MONTH—SOUTHERN COTTON-MILL VILLAGES.

NUMBER.

Classified amount of rent per month.	Dwellings having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Under $3	788	1,056	719	92					2,655
$3 and under $4	149	1,679	874	75	185	8			2,970
$4 and under $5	4	268	2,388	16	205	3	5	4	2,893
$5 and under $6		159	163	596	36				954
$6 and under $7		3	404	13	291				711
$7 and under $8			37	74	13	21			145
$8 and under $9				57	10	6	16		89
$9 and under $10				41	11	11	1		64
$10 and under $11				20	24	1		24	69
$11 and under $12					15				15
$12 and under $14				1	5	7	5	2	20
$14 and under $16						1			1
$16 and under $18						2	15	1	18
$18 and over					1	3		1	5
Total	941	3,165	4,585	985	796	63	42	32	10,609

PER CENT.

Under $3	83.7	33.4	15.7	9.3					25.0
$3 and under $4	15.8	53.0	19.1	7.6	23.2	12.7			28.0
$4 and under $5	.4	8.5	52.1	1.6	25.8	4.8	11.9	12 5	27.3
$5 and under $6		5.0	3.6	60.5	4.5				9.0
$6 and under $7		.1	8.8	1.3	36.5				6.7
$7 and under $8			.8	7.5	1.6	33.3			1.4
$8 and under $9				5.8	1.3	9.5	38.1		.8
$9 and under $10				4.2	1.4	17.5	2.4		.6
$10 and under $11				2.0	3.0	1.6		75.0	.7
$11 and under $12					1.9				.1
$12 and under $14				.1	.6	11.1	11.9	6.3	.2
$14 and under $16						1.6			(1)
$16 and under $18						3.2	35.7	3.1	.2
$18 and over					.1	4.8		3.1	.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 per cent.

Details as to the relation between the type and size of dwellings and the rent charged per month are given in the table below:

TABLE 91.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—SOUTHERN COTTON-MILL VILLAGES.[1]

Type and size of dwelling.	Number of dwellings renting at each classified amount per month.													Total.	
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $6.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over	
Detached, frame:															
2 rooms	181	37	4												222
3 rooms	693	956	193	119	3										1,964
4 rooms	521	808	1,883	133	362	37									3,744
5 rooms	74	74	16	330	13	52	19	5	20		1				604
6 rooms		155	205	28	283	12	10	11	13	14				1	732
7 rooms		8	3			21	6	8	1		7	1	2	3	60
8 rooms			5				15	1			5				26
9 rooms			3										1		4
10 rooms											1				1
14 rooms									1						1
Total	1,469	2,038	2,312	610	661	122	50	25	35	14	14	1	3	4	7,358

[1] This table does not include 5 boarding houses and hotels, also 127 houses free to officials and employees and 77 with cost or number of rooms not reported.

TABLE 91.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, BY TYPE AND SIZE OF DWELLING—SOUTHERN COTTON-MILL VILLAGES[1]—Concluded.

Type and size of dwelling	Number of dwellings renting at each classified amount per month.														Total.
	Under $3.	$3 and under $4.	$4 and under $5.	$5 and under $9.	$6 and under $7.	$7 and under $8.	$8 and under $9.	$9 and under $10.	$10 and under $11.	$11 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and over.	
Detached, stone:															
2 rooms	1														1
4 rooms			16												16
6 rooms				8		1									9
10 rooms											1				1
Total	1		16	8		1					1				27
Detached, brick:															
5 rooms	1						1								2
6 rooms									11	1	5				17
7 rooms								3							3
8 rooms							1						15		16
10 rooms														1	1
16 rooms			1												1
Total	1		1				2	3	11	1	5		15	1	40
Semidetached, frame:															
2 rooms	605	104													709
3 rooms	362	633	26	40											1,061
4 rooms	194	66	364	20	12										656
5 rooms	16	1		227											244
6 rooms		30			8										38
Total	1,177	834	390	287	20										2,708
Semidetached, brick:															
4 rooms			6												6
5 rooms						20		36							56
Total			6			20		36							62
Semidetached, stone: 5 rooms						2									2
Detached, flat, frame:															
3 rooms	1	32	1												34
4 rooms	4														4
5 rooms	1			31											32
Total	6	32	1	31											70
Semidetached, flat, frame:															
3 rooms		56	48												104
Semidetached, flat, brick:															
5 rooms				8											8
Row, flat, brick: 4 rooms			24	10	24										58
Tenement, frame: 10 rooms									23						23
Row, frame:															
2 rooms	1	8													9
3 rooms		2													2
4 rooms			13												13
Total	1	10	13												24
Row, brick:															
4 rooms			82		6										88
5 rooms							37								37
Total			82		6		37								125
Grand total	2,655	2,970	2,893	954	711	145	89	64	69	15	20	1	18	5	10,609

[1] This table does not include 5 boarding houses and hotels, also 127 houses free to officials and employees and 77 with cost or number of rooms not reported.

Table 92 below contains figures showing the distribution of dwellings of each type and material of construction according to the rent per room per month:

TABLE 92.—NUMBER OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—SOUTHERN COTTON-MILL VILLAGES.

Type of dwelling and material of construction.	Number of dwellings renting at each classified amount per room per month.								Total.
	Under 50 cents.	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$4 and under $5.	
Detached:									
Frame	18	2,607	3,842	856	30	3	1	1	7,358
Stone		8	15	4					27
Brick	1	1	4	13	20	1			40
Semidetached:									
Frame		679	1,859	170					2,708
Brick			26	36					62
Stone		2							2
Detached, flat, frame		6	63	1					70
Semidetached:									
Flat, frame			56	48					104
Flat, brick			8						8
Row, flat, brick			34	24					58
Tenement, frame			23						23
Row:									
Frame			16	8					24
Brick			82	43					125
Total	19	3,303	6,028	1,203	50	4	1	1	10,609

The house rent covers house and water in 46 of the villages reporting and includes also electric light in 17 of these. In a number of cases the use of pasture for cattle is allowed free, and occasionally the use of stalls. A unique condition is the free provision of electric current for household appliances in a village having a practically unlimited supply of power.

MODERN IMPROVEMENTS.

Of the 10,609 dwellings in the villages under consideration, information as to the water supply was furnished in 10,197 cases. Of these about 62 per cent used hydrants and 20 per cent used wells, while in 24 per cent water was in the house. In about 6 per cent of the cases, as the combined figures indicate, more than one source of supply was available.

Of the 8,269 dwellings the toilet arrangements of which are reported, only about 22 per cent were provided with water-closets at the time of the investigation, but these were being installed in many hundreds of houses and the figure to-day doubtless would be much higher than 22 per cent. Approximately 37 per cent were provided with can privies, and 10 per cent with vaults; the remainder still have surface toilets of one sort or another. Some half-dozen companies reported that they had installed, or were trying out, the systems of Kaustine privies or septic tanks recommended by various governmental agencies. At one of these villages a school-teacher volunteered the information that she "never saw such an improvement, and con-

ditions used to be pretty bad"; at another the investigator was told that "people don't know whether they like them or not; certainly the mosquitoes have been very much worse." A mill in Tennessee which experimented with the sytem of can privies reported that the cans froze in severe weather, making cleaning almost an impossibility.

Of one modern village, each of whose 372 houses, new and old, is provided with a water-closet, it is said that the damage in the case of the 82 "old" houses from carelessness has not amounted to $100 in the five years of the village's existence. To prevent damage to the plumbing toilet paper is supplied without charge in villages having improved toilet facilities. The cost of repairs necessitated by carelessness generally is charged against the householder.

Less than 4 per cent of all the houses have bathtubs, though in some of the newest developments space has been left for them to be installed later if desired. Twelve of the 48 communities report bathtubs in some houses, but in 11 of these the number of dwellings having tubs ranges from 2 to 24 only. The twelfth village is a striking exception to the rule, 272 of its 372 houses being provided with this feature. All of these houses were built in 1916 and 1917. Employers who complain that the bathtubs installed are used as coal bins, or not used at all, probably overlook the fact that in most cases water must be heated and carried to the tub in the old-fashioned way and that bathrooms built on porches are likely to be cold.

In several villages the community bathhouse, built in the vicinity of the mill, and heated by steam therefrom, is intended for use by the families and not exclusively by the operatives.

Sinks are by no means as uncommon as bathtubs, 21.4 per cent of all houses being supplied with them. Only 49 houses have hot-water provision.

Of the 9,883 houses whose lighting facilities are reported, 4,078, or 41.3 per cent, are electric lighted. Gas is almost nonexistent, being reported in only seven towns, in six of these being supplied by the city. In most of the mill villages the custom is to burn oil, as is done in the country districts not reached by electric power.

The president of one of the most interesting places visited, whose aim is to have "the best mill, the best village, and the best people in the South," considers the improvements in the housing and living conditions the greatest contributory factor in the successful operation of the mill. His people like these improvements; some move away, of course, but generally they come back, explaining that the womenfolk could not get along without the household and other conveniences.

In this village all the houses have sewer connections and water-closets; all have running water, and only the Negro tenements are without sinks; about three-fourths of the houses have bathtubs; all

but the Negro quarters have electric lights, and electric power is supplied free for fans, irons, etc.

Prices at the stores (a fine grocery, a drug store, and a white-tiled meat market) are kept as low as possible. The streets are being paved, walks laid, and trees planted. The new mill is of fireproof construction and has as much glass as the walls will stand. There is a $20,000 school building. The president believes that all this is "good business," and that money invested in getting a permanent, high-class labor force is well spent.

COST OF CONSTRUCTION.

Under the changing market conditions any statement as to costs of recent improvements is worth little or nothing. At the time of the investigation (January–March, 1917) it was quite generally asserted that houses that had formerly cost but $100 a room were costing $150. However, in view of the simplicity and general uniformity of construction, certain average costs may be hazarded as a rough statement of the amount of investment in company housing in this region. The costs quoted include, as throughout the report, only bare house cost, without land, but with such primitive inside improvements as are afforded.

The following table gives details as to costs of construction:

TABLE 93.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—SOUTHERN COTTON-MILL VILLAGES.

Type of dwelling and material of construction.	Number of dwellings costing each classified amount.											Total.
	Under $250.	$250 and under $500.	$500 and under $750.	$750 and under $1,000	$1,000 and under $1,250	$1,250 and under $1,500	$1,500 and under $1,750	$1,750 and under $2,000	$2,000 and under $2,250	$2,250 and under $2,500	$3,250 and over.	
Detached:												
Frame	73	2,169	1,724	1,225	331	76	42	25	7	5	2	5,679
Brick				2	12		20				2	36
Stone		20	4	1					1			26
Semidetached:												
Frame	123	499	846	254								1,722
Brick				56								56
Stone						2						2
Detached, flat, frame		1	5									6
Semidetached:												
Flat, frame												
Flat, brick												
Tenement, frame				23								23
Row:												
Frame												
Brick			6									6
Total	196	2,689	2,585	1,561	343	78	62	25	8	5	4	[1]7,556

[1] Not including 3,053 dwellings for which price was not reported.

Classified costs per room for dwellings of specified type and material of construction are contained in Table 94.

TABLE 94.—NUMBER OF DWELLINGS OF EACH CLASSIFIED COST OF CONSTRUCTION PER ROOM, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION—SOUTHERN COTTON-MILL VILLAGES.

Type of dwelling and material of construction.	Number of dwellings costing each classified amount per room.											Total.
	Under $50.	$50 and under $100.	$100 and under $150.	$150 and under $200.	$200 and under $250.	$250 and under $300.	$300 and under $350.	$400 and under $450.	$450 and under $500.	$550 and under $600.	$600 and under $650.	
Detached:												
Frame	4	556	2,427	1,459	939	168	119	5	1	1		5,679
Stone		20		5	1							26
Brick				12	17	5		1			1	36
Semidetached:												
Frame		2	392	1,052	144	120	12					1,722
Stone				2								2
Brick				56								56
Detached, flat, frame			6									6
Tenement, frame		23										23
Row, brick				6								6
Total	4	601	2,825	2,592	1,101	293	131	6	1	1	1	[1]7,556

[1] Not including 3,053 dwellings for which cost of construction per room was not reported.

The relation between the cost of construction per room and the rent per room is brought out in the following table:

TABLE 95.—RELATION OF COST PER ROOM TO RENT PER ROOM—SOUTHERN COTTON-MILL VILLAGES.

Classified cost per room.	Number of dwellings renting at each classified amount per room per month.								Total.
	Under 50 cents.	50 cents and under $1.	$1 and under $1.50.	$1.50 and under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$4 and under $5.	
Under $50		3	1						4
$50 and under $100		551	50						601
$100 and under $150	18	1,134	1,518	155					2,825
$150 and under $200		387	1,612	592		1			2,592
$200 and under $250		182	613	283	22	1			1,101
$250 and under $300			287		6				293
$300 and under $350			108	6	16	1			131
$400 and under $450				5		1			6
$450 and under $500							1		1
$550 and under $600								1	1
$600 and under $650			1						1
Not reported	1	1,046	1,838	162	6				3,053
Total	19	3,303	6,028	1,203	50	4	1	1	10,609

HOTELS AND LODGING HOUSES.

Hotels for unmarried officials, school-teachers, traveling salesmen, and transients are found in most of the good-sized or better-class villages, and boarding houses for unmarried operatives exist practically everywhere. Ordinarily both hotels and boarding houses are simple frame structures of 10 to 30 rooms, managed well or ill, like such places elsewhere.

Among the Georgia mill towns for which schedules were secured but not included in the tabulation because of incompleteness of data is

one having such an interesting plan for housing unmarried operatives that the information may well be included in this section of the report and is here summarized:

There were large numbers of single women in the surrounding country who lived with relatives, did all the housework, even to woodchopping, and brought up the children, yet were taunted with being dependent on their relatives. Few could enter employment in the mills because people objected to taking women boarders. Some of these persons were "drummed up" by mill agents and the inn was built to house them.

The inn is a wide-fronted building of two stories and attic on the edge of the pine woods, approximately three city blocks from the mill. It is of frame painted white, with shingle roof. A 12-foot porch with big pillars extends the width of the house, and upstairs is a railed but uncovered balcony of the same size. There is a back porch also.

The first floor has 17 rooms, as follows: Parlor, reading and recreation room, office and library, dining room, butler's pantry, kitchen, cook's pantry, matron's suite (2 rooms and bath), 4 double bedrooms, 2 bath and toilet rooms, linen closet. The second floor has 13 double bedrooms, 1 single bedroom, 1 larger bedroom, servants' quarters (2 rooms and toilet), 2 bath and toilet rooms, 2 linen closets. Storage for trunks is provided in the attic. The halls up and down stairs are wide enough for recreational purposes, even dancing. Washbowls, tubs, and showers are liberally provided. The house is steam heated, electric lighted, and screened, and the furnishings are unusually pretty. The servants' quarters are entirely shut off, being approached by outside stairs only. Laundry facilities are in a separate building in the rear.

The inn was built to accommodate 38 or 40 persons besides the matron, her two daughters, and the servants. Originally intended for single women only, the house now includes among its occupants several married couples without children. Four or five months of attempting to operate the inn for single women only proved that plan a failure, but with a few married women as chaperones, the house is a great success. Changes among the boarders are becoming less in number as they become acquainted and accustomed to better methods of living; many who leave to live elsewhere soon return to the inn. The house is the scene of a great many of the social activities of the village.

The matron, formerly engaged in mission and welfare work, receives $75 a month and board and lodging for herself and daughters. Much of the inn's success, which is so pronounced that the house has been duplicated at two other properties of the same company, is said to be due to the system of management.

For the single men there is another inn, somewhat similar to the one described. Its use is given without charge to a competent woman manager, who makes what she can out of it, but must provide satisfactory service and board for the employees. The purpose of this house was to "corral the hobo labor," described as boarding around, sleeping three in a bed, and staying at a mill for one-pay period only. The mill found that it hired the same men about twice a year. These floaters are good workers and the mill wants to hold them.

Still a third and a fourth building for special classes of employees exist in this village—a house for the school teachers and another for the young men in the office departments. The former is filled to capacity and an addition is under consideration; the latter has not succeeded, owing to the enlistment and the selective draft, and is practically closed.

ADMINISTRATION.

Contrary to the improved method which is growing in favor in the other industries, under which the housing activities are separate and distinct from the production departments, it is the almost invariable rule among southern cotton-mill villages that the housing of the operatives is done "as part of the general business." In only one of the 48 villages is there a special department having this function. In most cases there is a "house man" charged with the maintenance and allotment of the dwellings and the collection of rents.

In all the villages reported upon, the rent is deducted from the wages. It is collected weekly in 25 cases, biweekly or semimonthly in 20 cases, and monthly or every four weeks in 3; it is not collected in advance.[5]

On the question of the collection of rent during unemployment or sickness, 10 mills report that the rent is collected later, in easy installments; 4 mills, that it is deducted from the pay of other employees in the same house; 5, that it is crossed off the books; and 18, that the policy is lenient, depending on circumstances. Nine report that no rent is charged during a mill shutdown, and one states that only half rent is collected at such time.

None of the 48 companies reported that houses were sold. In a few cases it was reported that lots were sold on easy terms to employees who desired to build, and in a number of cases it was stated vaguely that "many of the employees own their homes."

MAINTENANCE.

In 15 of the 48 communities lawns are maintained by the tenant, in 1 they are maintained by the company, and in 13 they are maintained "jointly," the expression probably meaning that the company

[5] The practice of withholding 1 week's or 2 weeks' pay, not made up until the worker leaves the mill's employ, was not inquired into. Where this obtains the collection of rent is, of course, 1 or 2 weeks behind.

furnishes seed, and perhaps plowing, but interests itself no further than that. In more than one-third of the cases it is reported that grass plots are few or altogether lacking.

Prizes for gardening are given by one-third of the companies reporting. Even at the time of the investigation (January to March) many yards showed signs (generally only beds marked off by half bricks, stones, or cans) that in season they are different from the baked-clay door yards adjoining. In a few cases the statement was made that the villages themselves are veritable gardens in summer, and indeed the existence of community plots and greenhouses to provide seedlings and cuttings, and the practice of caring for potted plants in the mill or greenhouse all winter lends credence to this assertion. One mill in Georgia has 1,000 feet of violet borders, tended by children, about school, church, and community cottage.

Cooperation with Federal and State agricultural authorities is responsible for the many tomato and canning clubs among the children. In a number of villages company land at a distance from the homes is allotted to adults or children or both for vegetable growing. In one case reported this work is supervised by the landscape gardener in charge of the village improvement.

Closely related to the subject of gardening is that of fencing. In 17 villages, it is reported, the company provides the fences, in 13 the tenants provide them, and in 2 there is an arrangement for joint provision. In one of these last two the company pays 60 per cent and the tenant 40 per cent of the cost. In another case where an unusually fine type of wire fencing is used it is stated that the company provides the materials and the tenant pays for the labor. In one-third of the towns there are no fences. The cases in which information is given as to kind of fence in use may be classed as follows: Wire, 10; picket, 4; board, 1; various, 14. In two villages seen hedges take the place of the less picturesque fence. In most places the condition of the fences is reported as good.

Substantial outbuildings for fuel, occasionally intended also for other storage purposes, were seen at the rear of the lots in a few of the villages. These are said to pay for themselves in saving wear and tear on porch and house.

The collection of garbage is attended to by the company in 33 cases, by the city in 9, and by city and company jointly in 2. In 4 cases no information is given on this point, but in one of these the statement is made that the company collects tin cans. The frequency of garbage collection varies considerably among the 40 villages for which this information was obtained, collection being daily in 3 cases, semiweekly in 8, weekly in 17, and monthly in 1. In the last named the reply can have reference only to rubbish, not kitchen waste. Four mills report that collections are made weekly in winter

and semiweekly in summer. In 7 cases the information is not specific, but in none of them are collections less frequent than "every week or 10 days," and in most of them the reports indicate that this important matter receives attention two or three times a week.

Aside from the general appearance of a village, which, it is probably true to say, depends wholly on the employing company, neatness of the premises depends, as in other communities, on the individual householder; of adjoining houses one may be neat indoors and out, and the other may have every appearance of being utterly disreputable. Ordinarily, however, such contrasts do not exist long. The better class workers object to shiftless neighbors. They make application for the next vacant house that is more fortunately situated and move away, this being one explanation of the continual removal from one house to another complained of by some superintendents. It may be said that houses with a somewhat larger lot than the average are in great demand among the householders who attempt gardening.

Only in cases of gross mistreatment of property, it appears, are tenants forced to leave on that account. Most of the mills reply that this action would be taken "if necessary," or if the bad housekeeping were "malicious." Some mills report that in exaggerated cases of disorder premises are cleaned up by the company's men and the expenses therefor are deducted from the tenant's pay. The custom of withholding one pay period's wages and of paying only when the operative quits employment enables the company to exact that premises be left in good condition when they are vacated.

COST OF MAINTENANCE.

On the subject of repairs and maintenance the figures secured from the 48 mills under discussion are very unsatisfactory. Ordinarily the house repairs are made by the men employed to do the mill work of this character, and only in rare cases is it possible to separate the costs. Sixteen of the mills investigated report for the year 1916 maintenance charges and the rent receipts, and give the original cost of all dwellings. These figures indicate for the 16 mills that the rent receipts minus the maintenance charges were about 3.6 per cent of the original cost of the dwellings. Taken over an average of three to five years, this percentage is somewhat higher.

The maintenance of the property has a great deal to do with the general appearance of individual houses and of the community. Of the 300 houses of one South Carolina village, more than 50 are reported as having been built in 1845 and 18 or 20 others during the Civil War; yet they have been so well kept up that the community is one of the most pleasing of the many visited. Another village, whose cottages were built largely in 1850 and 1860, is reported by the investigator as "not attractive, but the absolute cleanliness of the town makes it

appear so"; a third, in which 1850 was a year of great building activity, presents, through lack of fresh paint, a decidedly dreary appearance.

Two cotton mills in Georgia, which charge to maintenance the necessary labor and material for the upkeep of the houses and the streets, lights, garbage collection, etc., report data showing that 68 per cent of the rent receipts for the four-year period 1912 to 1915 were spent for that purpose. These charges, it is noted, do not include interest, insurance, or depreciation. Taxes are virtually included, since the companies themselves perform, as part of maintenance and repair, functions ordinarily performed by the community and supported by taxes, such as care and cleaning of streets, lighting, water supply, garbage collection, and policing. Depreciation may also perhaps be eliminated, as the extent of the repair and maintenance may well be taken to cover that element. Perhaps, too, increase in land value may more than cover depreciation in the value of the houses.

The amount left as return on the investment, after deducting the expenses of maintenance from the rent receipts, is $7,580. This represents a return of 4.4 per cent on the value, reported as $174,100, of the houses of both companies combined.

TABLE 96.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF TWO COTTON MILLS IN GEORGIA, 1912 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1912	$22,037.17	$8,515.66	39
1913	24,936.77	28,473.57	114
1914	24,174.35	9,511.38	39
1915	24,877.58	19,206.91	77
Average	24,006.47	16,426.88	68

Two companies in Tennessee, which state that they charge to maintenance and repairs only necessary labor and material (that is, this expense does not include taxes, insurance, interest, or depreciation), show, on the other hand, that only 30 per cent of their rent receipts are absorbed for that purpose, as indicated in the following table:

TABLE 97.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF TWO COTTON MILLS IN TENNESSEE, 1912 TO 1916.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1912	$22,494.30	$8,546.38	38
1913	23,007.76	7,490.38	33
1914	23,766.32	8,267.69	35
1915	25,408.81	4,371.85	17
1916	26,482.47	7,434.04	28
Average	24,231.93	7,222.07	30

The combined value of the houses of these two Tennessee companies is $257,575. The amount remaining from rent receipts, after expense of maintenance is deducted, is $17,010, or 6.6 per cent of the value of the houses, exclusive of land.

Three Alabama companies show expenditures for maintenance and repairs as 50 per cent of their average yearly rent receipts for the three-year period 1913 to 1915. This leaves for the fixed charges—insurance, interest, depreciation—about $32,871 annually, or 5.4 per cent of the original cost of the houses of these companies, reported as $608,990.

TABLE 98.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE—THREE COTTON MILLS IN ALABAMA, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	[1] $29,963.00	[1] $16,659.00	56
1912	[2] 51,611.00	[2] 18,048.00	35
1913	59,386.40	43,633.08	73
1914	68,977.80	26,113.14	38
1915	67,969.50	27,974.68	41
Average	[3] 65,444.57	[3] 32,573.63	[3] 50

[1] One establishment only. [2] Two establishments only. [3] Average for 1913, 1914, and 1915.

A comparison of the figures supplied by six mills shows striking differences in some of the factors most closely related, such as rents, costs, return on investment, etc. The tabular statement following makes such comparisons.

TABLE 99.—COST OF DWELLINGS, RENT RECEIPTS, 1916, AND RETURN ON INVESTMENT, 1916, FOR SIX MILLS—SOUTHERN COTTON-MILL VILLAGES.

Mill and location.	Original cost of dwellings.	Average cost per dwelling.	Rent receipts in 1916.	Average rent per dwelling in 1916.	Return on investment (exclusive of land).[1]
					Per cent.
Mill No. 1 (South Carolina)	[2] $192,800	[2] $660	[2] $10,799	[2] $37	[2] 5.6
Mill No. 2 (Alabama)	190,140	718	14,325	54	7.5
Mill No. 3 (South Carolina)	48,120	411	2,726	23	5.7
Mill No. 4 (Alabama)	83,500	1,113	4,356	58	5.2
Mill No. 5 (North Carolina)	146,025	470	8,631	28	5.9
Mill No. 6 (Tennessee)	222,275	722	23,587	77	10.6

[1] Covers interest, insurance, and depreciation. [2] Not including 40 houses, rent free.

CHAPTER XIV.—IRON AND STEEL TOWNS OF THE NORTH.

Housing conditions in the iron and steel towns of the northern district, including the States of Maryland, New Jersey, New York, Pennsylvania, Ohio, Indiana, and Minnesota, present such a variety of conditions as to make it almost impossible to give a true word picture. The towns range in type from high-class towns, laid out according to town-planning principles, to undeveloped and neglected communities. The houses present a considerable variety in type, material of construction, number of rooms, and sanitary equipment.

Housing conditions in the iron and steel towns of Pennsylvania and Maryland, New York, and Ohio are closely similar to those prevailing in the anthracite and bituminous coal region of Pennsylvania. The semidetached mine type of house is frequently found. In the more settled cities row houses have been built. In order to show the different varieties of houses in this region a few contrasting pictures are given here (see Figs. 65–72).

Historically, the earliest town disclosed by the Bureau's survey was one located in Pennsylvania, which dated from 1850. This particular town is one of the earliest steel towns established in the State and is another illustration of the fact that a large number of industrial cities are the product of business enterprises which have found it necessary not merely to organize industrial plants but also to provide whole communities.

SCOPE OF SURVEY.

Employers in the iron and steel region of the Eastern and Middle West States house about three employees to each company dwelling, and 0.6 employee per room. This calculation is based on information from nine different communities, where 45,075 men are employed and 5,528 are housed by the companies. The data relate to 1,882 dwellings having an average of 5.3 rooms per dwelling.

TABLE 100.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED IN NINE COMMUNITIES—NORTHERN IRON AND STEEL TOWNS.

Community.	Number of employees.	Number of employees housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	21,783	150	103	618	6.0
Community No. 2	7,230	250	151	1,004	6.6
Community No. 3	7,631	2,920	555	2,938	5.3
Community No. 4	1,955	700	250	600	2.4
Community No. 5	1,200	138	42	225	5.4
Community No. 6	521	350	154	820	5.3
Community No. 7	2,155	200	78	486	6.2
Community No. 8	600	20	15	75	5.0
Community No. 9	2,000	800	534	3,182	6.0
Total	45,075	5,528	1,882	9,948	5.3

SIZE OF DWELLINGS.

The figures in Table 101 show that the prevailing size of company dwellings in the northern iron and steel district is four, five, or six rooms, houses of these sizes forming, respectively, 27, 25.2, and 28.5 per cent of the total 5,722 houses.

TABLE 101.—NUMBER AND PER CENT OF DWELLINGS HAVING EACH CLASSIFIED NUMBER OF ROOMS—NORTHERN IRON AND STEEL TOWNS.

Number of rooms.	Number of dwellings.	Per cent of total.
2 rooms	274	4.8
3 rooms	125	2.2
4 rooms	1,547	27.0
5 rooms	1,442	25.2
6 rooms	1,629	28.5
7 rooms	245	4.3
8 rooms	239	4.2
9 rooms and over	221	3.8
Total	5,722	100.0

RENT.

Table 102, giving rent per month, classified by size of dwelling, shows that 16.4 per cent rent for $6 and under $7 per month. It may be noted that a very considerable proportion (14.3 per cent) rent for $18 and over per month. This is a larger proportion at such high rental than is found in the case of company houses in other regions and is accounted for by the fairly large proportion of better-class houses for the more skilled laborers and members of the supervisory staffs who are accommodated in company houses in this region.

TABLE 102.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—NORTHERN IRON AND STEEL TOWNS.

NUMBER.

Classified amount of rent per month.	Dwellings having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms or over.	
Under $3		1	1						2
$3 and under $4		6	4	25					35
$4 and under $5	8	1	237	203			1		450
$5 and under $6	66	17	9	37	218				347
$6 and under $7	200	17	446	30	247				940
$7 and under $8			14	200	34	46	6		300
$8 and under $9		69	65	113	255	11	3	2	518
$9 and under $10		1	222	47	5	1			276
$10 and under $11			116	216	74	62	6	3	477
$11 and under $12			8	2	172	26	1		209
$12 and under $14		13	128	70	179	3	153		546
$14 and under $16			12	159	61	27	20	17	296
$16 and under $18			245	99	80	12	1	70	507
$18 and over			40	241	304	57	48	129	819
Total	274	125	1,547	1,442	1,629	245	239	221	5,722



FIG. 65.—HIGHER CLASS HOUSES IN A PENNSYLVANIA STEEL TOWN. NOTE FENCE AND TREES.



FIG. 66.—PENNSYLVANIA STEEL TOWN. DETACHED FRAME HOUSES.

Note close placement of houses, neat woodsheds and well-kept alleys.



FIG. 67.—STEEL TOWN IN PENNSYLVANIA. NOT COMPANY HOUSES. PREMISES ILL-KEPT.



FIG. 68.—STEEL TOWN IN PENNSYLVANIA. NO GARBAGE CAN PROVIDED, CITY RESPONSIBLE FOR CONDITIONS.



FIG. 69.—STEEL TOWN IN PENNSYLVANIA. HILLSIDE HOUSES.
Much too closely placed and unattractive.

TABLE 102.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—NORTHERN IRON AND STEEL TOWNS—Concluded.

PER CENT.

Classified amount of rent per month.	Dwellings having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms or over.	
Under $3		0.8	0.1						(1)
$3 and under $4		4.8	.3	1.7					0.6
$4 and under $5	2.9	.8	15.3	14.1			0.4		7.9
$5 and under $6	24.1	13.6	.6	2.6	13.4				6.1
$6 and under $7	73.0	13.6	28.8	2.1	15.2				16.4
$7 and under $8			.9	13.9	2.1	18.8	2.5		5.2
$8 and under $9		55.2	4.2	7.8	15.7	4.5	1.3	0.9	9.1
$9 and under $10		.8	14.4	3.3	.3	.4			4.8
$10 and under $11			7.5	15.0	4.5	25.3	2.5	1.4	8.3
$11 and under $12			.5	.1	10.6	10.6	.4		3.7
$12 and under $14		10.4	8.3	4.9	11.0	1.2	64.0		9.5
$14 and under $16			.8	11.0	3.7	11.0	8.4	7.7	5.2
$16 and under $18			15.8	6.9	4.9	4.9	.4	31.7	8.9
$18 and over			2.6	16.7	18.7	23.3	20.1	58.4	14.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 per cent.

Nearly one-fourth (24.1 per cent) of the houses in the district rent for $1.50 and under $2 per room per month. Houses renting for $1 and under $1.50 and $2 and under $2.50 per room per month appear to be in about equal proportion—17.4 and 16.2 per cent, respectively, as is shown in the following table:

TABLE 103.—NUMBER AND PER CENT OF DWELLINGS RENTING AT EACH CLASSIFIED AMOUNT PER ROOM PER MONTH—NORTHERN IRON AND STEEL TOWNS.

Classified amount of rent per room per month.	Number of dwellings.	Per cent of total.
50 cents and under $1	461	8.1
$1 and under $1.50	995	17.4
$1.50 and under $2	1,382	24.1
$2 and under $2.50	927	16.2
$2.50 and under $3	528	9.2
$3 and under $3.50	499	8.7
$3.50 and under $4	155	2.7
$4 and under $5	691	12.1
$5 and under $6	78	1.4
$6 and over	6	.1
Total	5,722	100.0

MODERN IMPROVEMENTS.

As respects equipment it may be noted that over one-half of the dwellings in the region are lighted by electricity—that is, 2,885, or 50.4 per cent, of the 5,722 included in the survey. Over seven-tenths have running water inside—4,250, or 74.3 per cent of the total. A very considerable proportion have three-piece bathrooms and gas and electric light connections—namely, 2,259, or 39.5 per cent of the total. On the other hand, 1,410, or 24.6 per cent, have no modern conveniences of any kind.

COST OF MAINTENANCE.

Only two companies of the 25 iron and steel companies covered by the investigation have reported the amount they expended for repair and upkeep of company houses. These companies have, however, reported roughly comparable data in that respect. The charges to the maintenance account include only labor and material for ordinary repairs, omitting the fixed charges of taxes and insurance, and expenditures for outside upkeep such as street cleaning, garbage collection, and general sanitation. From the data reported by these two companies, which are engaged in the manufacture of railroad cars, it appears that the average charges for ordinary repairs and maintenance of the houses have amounted to 24 per cent of the rent receipts for the 5-year period 1911 to 1915. The range has been from 12 per cent in 1911 to 32 per cent in 1914.

The total original cost of the houses of these companies, not including land, is $258,688. The average annual rent receipts, which amount to $21,376.42, yield, therefore, a gross return of 8.3 per cent on that investment.

TABLE 104.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE, TWO STEEL-CAR COMPANIES, 1911 TO 1915.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$18,642.00	$2,252.09	12
1912	17,566.07	3,019.98	17
1913	22,177.77	6,822.37	31
1914	24,445.71	7,903.78	32
1915	25,050.56	5,603.76	23
Average	21,376.42	5,120.40	24

Below are given descriptions of four communities in the iron and steel region. Another community, Morgan Park, which is omitted from this report, was described at length in the April, 1918, issue of the Monthly Review of the Bureau of Labor Statistics (pp. 1–25).

SPECIAL COMMUNITIES.

COMMUNITY C.

This community is a noteworthy example of a company town planned, constructed, and controlled by a steel company in the northern iron and steel district, which includes Minnesota, Illinois, Indiana, and Ohio, and the eastern States north of Virginia. The town in question is in one of the eastern States and shows an unbroken history of company ownership of about 30 years. It is as old as Pullman, Ill., which has passed into history as a company



FIG. 70.—STEEL TOWN IN PENNSYLVANIA. CHEAPER TYPE OF SEMIDETACHED HOUSE SOLD BY COMPANY ON TERMS.



FIG. 71.—STEEL TOWN IN PENNSYLVANIA. SEMIDETACHED HOUSES.

Rent for $10 per month for each family. No grass or trees; cinder courts.



FIG. 72.—STEEL TOWN IN PENNSYLVANIA. SUBSTANTIAL HOLLOW TILE AND BRICK HOUSE.

Note poorly kept yard.

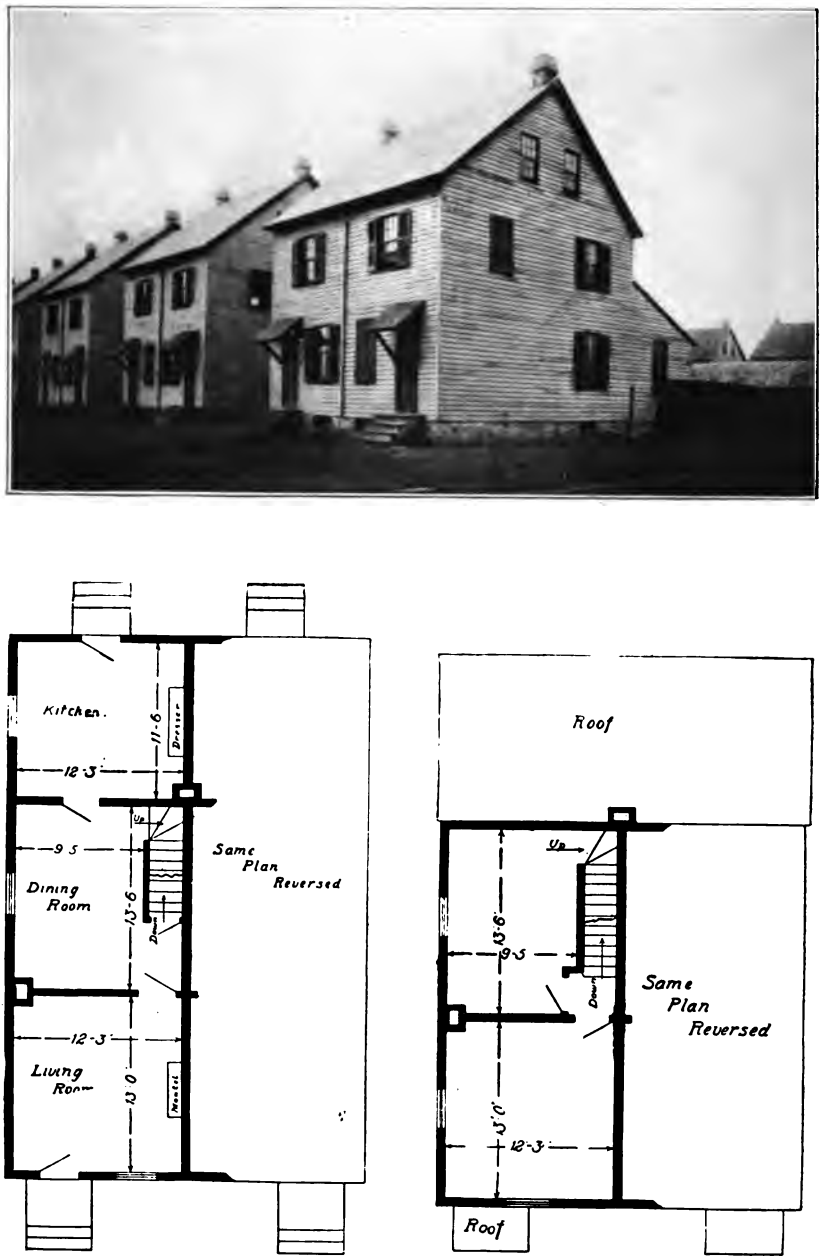


FIG. 73.—EASTERN STEEL TOWN, COMMUNITY C.

Pictures and plans of semidetached houses.

town. During all that time it has been owned by only two companies—the steel company which founded it in 1887–88 and the present corporation, which acquired it in 1916. Very much the same individuals have been managing it for a number of years, so that it presents a continuity in policy of management. A conspicuous feature of that policy has been the absence of self-government, characteristic of company-town ownership almost without exception.

The company owns every acre of the 2,000 acres occupied by its plant and the community, and will sell no land or houses; consequently no private building has been undertaken.

The broad scope of company ownership in this community is explained as due to the remoteness of the plant from any large city. From 1887, when the plant started, up to 1889 the only means of communication with the plant was by boat. The plant is situated 12½ miles from a large city, with which it is at present connected by both steam and electric lines. The travel time for an employee living in the nearby city varies from 20 minutes to an hour, depending on the location of his home in the city. The cost of the round trip is 60 cents by railroad and 25 cents by the electric cars.

While remoteness from a labor supply was the principal motive for the construction of a complete town and the provision of houses, certain incidental results have come from the maintenance of complete control, although such control, it should be noted, extends only to one-third of the company force.[1] Stability is given to the labor force, it is declared, and probably a better class of workmen is secured. Labor troubles are greatly reduced, because the force is not interfered with by persons outside the community, and the landlord and employer relation combined naturally carries with it authority which would not be possible if the relationship were severed. The tenancy of the employee, it is specified in the lease, is "for and during the time he continues in the employment" of the company. If the employee on his own motion severs his contract of employment no notice to vacate the premises is required to be given by the company. In case of a strike, therefore, the employee is automatically, as it were, left without a home. He must vacate the premises at once.

A complete population census is made by the police department and kept up to date. This shows, for every individual in every company house, his name, relationship to head of family, sex, color, age and conjugal condition, place of birth, place of birth of parents,

[1] Out of 5,618 employees only about a third are accommodated in company houses. The total population in the company houses, not including the "barrack" population, was about 3,500 men, women, and children.

status as to citizenship, ability to speak English, occupation, length of residence, and previous residence, etc.

Practically every person in the community is directly or indirectly an employee of the company. The school-teachers, the superintendent of schools, and the ministers live in rented company houses. The company provides all the different community facilities—water, sewers, electric light, paving, gutters, and sidewalks. It provides the school building and rents it to the community for the nominal sum of $1 a year, and it rents the ground for the churches and parsonages for the same nominal sum per year. It performs the various community functions, such as street cleaning, sanitary collection, and fire and police protection. All police officers are deputized company employees.

The village in question practically depends upon the neighboring city for most of its social life. Only one clubhouse is provided, and that is for the technical and office staff. There is a tennis court in connection with the clubhouse. Opportunities for boating and bathing in summer are plentiful. There is an extensive park east of the village. What was once a playground has been allowed to go to ruin. There is, however, plenty of space in the village where children may play.

The town also depends upon the neighbor city for hospital arrangements. First aid only is given at a hospital room maintained within the establishment.

Several churches of various denominations have been erected in the village. The only store in the town is the company store. A bank has been established.

THE TOWN PLAN.

The town, situated on level ground, is laid out along rectangular lines, with streets 60 feet wide, 20 feet of which is set aside for parking. Certain sections are set aside for business streets and other sections for staff houses and those of better-paid, skilled workmen. Other parts are set aside for the barracks, a long row of frame or hollow tile, rented only to single men. These barracks are in two principal groups; one group, immediately back of the Negro section of the town, is contained within a high barbed-wire fence. A guarded gateway is the only entrance to this inclosure; the other group is within the plant yards, the works having expanded so as to surround them. Some of the older medium class houses are also within the plant confines, which has greatly militated against their proper upkeep. Thus plant policy and housing policy have not been coordinated, and where conflict has arisen plant extension has taken place at the expense of housing. Trees are plentiful, the streets are clean, and concrete walks have been laid in the better residence section. The

town as a whole gives one the impression of a small country town rather than that of a residential suburb.

In the better residence district the alleys are flanked by well-kept hedges, which are 22 feet apart. A cinder roadway in the center is 12 feet wide. Garbage cans are set close to the hedge and are therefore inconspicuous. The alleys present a remarkably neat, clean, and generally attractive appearance.

The barracks streets are of dirt, are somewhat littered with débris and waste, and present on the whole a dreary and desolate picture. The streets around the new boarding houses erected in 1916 have not yet (1918) been put into shape, but still remain muddy roads piled high, in some places, with excavated material.

HOUSES OF THE BETTER CLASS.

Large, commodious, detached houses and ample lots (all lots are 125 feet deep) are provided for the high-salaried employees holding supervisory positions and comfortable houses and cottages are built for the skilled employees. In nearly all cases the better-class dwellings are plastered inside. The houses built in the early days are clapboarded and painted; the newer ones are hollow tile with stucco exterior and present an attractive appearance.

Back of all these houses are neat flower gardens. Cash prizes for gardens and general appearance of premises have had a stimulating effect. All householders are required to keep the garbage in cans having tight covers. These cans are kept at the rear of the lots and are collected daily by an efficient garbage collection department.

Furthermore, the keeping of attractive premises is greatly facilitated by certain clauses in the rental lease, which prohibit the keeping of horses, cattle, sheep, swine, or goats or any other animals that will be dangerous to persons or prejudicial to a clean, tidy, and proper use of the premises; also, the keeping of any geese or ducks or chickens, unless confined, or dogs without permission of the company, is forbidden.

The elimination of board fences in some instances and the substitution of wire ones has also added to the attractiveness of these premises. In the better residences front fences are permitted. Lawns are well trimmed.

At the time of this inquiry, data were secured concerning 639 dwellings of the better and medium class houses. Of this total there are 27 detached houses, 274 semidetached houses, and 338 row houses. The houses, even the row houses; are for the most part of frame construction. These company houses are prevailingly six-room houses; the rent of the largest proportion of houses of this size ranges from $5 to $6 a month.

The two tables following give the details as to type of construction, size, and rent of these dwellings:

TABLE 105.—NUMBER OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION, COMMUNITY C—NORTHERN IRON AND STEEL TOWNS.

Type of dwelling and material of construction.	Number of dwellings having—						Total.
	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Detached, frame		20		3	1	3	27
Semidetached:							
Frame			216	10	10	8	244
Brick						6	6
Concrete block					4	2	6
Hollow tile				18			18
Row:							
Frame		20	112		128	12	272
Brick			8	38		10	56
Hollow tile	10						10
Total	10	40	336	69	143	41	639
Per cent	1.6	6.3	52.6	10.8	22.4	6.4	100.0

TABLE 106.—NUMBER OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH, IN COMMUNITY C—NORTHERN IRON AND STEEL TOWNS.

Rent per month.	Number of dwellings having—						Total.	Per cent.
	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.		
$4 and under $5		20					20	3.1
$5 and under $6			168				168	26.3
$6 and under $7		20	128				148	23.2
$7 and under $8	10						10	1.6
$8 and under $9			32	24			56	8.8
$10 and under $11			8	14	48		70	11.0
$12 and under $14					80		80	12.5
$14 and under $16				24		14	38	5.9
$18 and over				7	15	27	49	7.7
Total	10	40	336	69	143	41	639	100.0

A large proportion of the houses (236, 36.9 per cent) have no inside modern conveniences except gas or electric light, and 124, or 19.4 per cent, have only running water inside. There are 279, or 43.5 per cent, which have water-closet and sewer and water system. The following table shows details as to modern improvements of the 639 dwellings:

TABLE 107.—NUMBER OF DWELLINGS HAVING SPECIFIED SANITARY EQUIPMENT, BY TYPE OF DWELLING, IN COMMUNITY C—NORTHERN IRON AND STEEL TOWNS.

Type of dwelling.	Bath, water-closet, sewer or cesspool, water system, and gas or electric light.	Bath, water-closet, sewer or cesspool, and water system.	Water-closet, sewer or cesspool, and running water inside.	No modern conveniences except running water inside.	No modern conveniences except gas or electric light.	Total.
Detached	7				20	27
Semidetached	58				216	274
Row	16	188	10	124		338
Total	81	188	10	124	236	639

Typical Houses.

The typical semidetached frame house erected by the company has a lot frontage of 28½ feet with a depth of 125 feet, six rooms and cellar, hydrants in the yards for water, stove heat, and outside vault privies. There are three rooms on the first floor, two on the second, and one on the third under the roof. Ninety-six of these houses were built in 1890 at a cost of $710 each. The present rent is $5.50 per month. Two groups of 24 each were erected in 1901, the first group at a cost of $847 each, the present rent of which is $6 per month per dwelling; the second group cost $878 each and are rented for $6.50 per family per month. These are the cheapest grade of family houses. The shed extensions on the rear, it may be noted, have invited further makeshift extensions by the tenants. This has reduced the yard area and led to insanitary and unsightly cluttering of back yards.

A row of brick dwellings was erected in 1891. Each dwelling has a lot frontage of 14 feet with a depth of 125 feet. The family occupies six rooms and cellar for a rent of $10 per month. Bathtub, water-closet, sink, sewer and hot-water connections, and stove heat are provided. The average cost per dwelling was $1,348. A frame row providing identical equipment for each family rents for $8.50 per dwelling per month and cost $1,121 per dwelling.

Figure 73 shows pictures and plans of semidetached frame houses erected on lots 25 by 125 feet and providing seven rooms and cellar for each family, together with all modern sanitary conveniences and furnace heat. There are three rooms on the first floor, three on the second, and one on the third floor under the roof. A group of 10 of these frame houses erected in 1901 cost $1,520 per dwelling and rents for $18 per dwelling per month.

A similar group of four semidetached houses built in 1907 of concrete blocks cost $2,854 per dwelling and rents for $22.50 per dwelling per month.

A typical detached high-class frame house of seven rooms and cellar, erected in 1888 at a cost of $3,126, rents for $23 per month.

It is placed on a lot 65 by 105 feet and has all modern inside sanitary conveniences, as well as furnace heat.

Another high-grade one-family frame house erected in 1888 at a cost of $2,473 has 13 rooms and a cellar, all modern conveniences, and furnace heat, and rents for $22.50 per month. It is placed on a lot 83 by 125 feet.

Figure 74 illustrates a group of the recently erected (1916) hollow-tile dwellings. Eighteen houses of this type have seven rooms each, are without cellar, but have all modern sanitary improvements. They are heated by stove. They cost $1,800 and rent for $15 per month each. Thirty-six other houses were provided having seven rooms with cellars. These also have all modern improvements and are furnace heated. The addition of the cellar and the modern heating equipment brought the cost of these latter dwellings to $2,400 each. They rent for $20 per month.

SHANTIES OF THE UNSKILLED WORKMEN.

The foregoing account relates entirely to the houses of the better-paid skilled workmen and supervisory staff. For its unmarried, unskilled immigrant and Negro labor the company has erected one-room row dwellings or "barracks" and boarding houses. The row dwellings are designated as "shanties." They have existed at the plant since its establishment, with additions from time to time, the latest having been erected in 1916.

There are some 500 of these shanties built in rows of ten 1-room dwellings. Each room is about 10 by 14 feet, with the comb of the roof 12 feet and the sides 8 feet from the floor. In 400 of them the construction is of ordinary rough pine 1-inch boards, weather-stripped on the outside, commonly described as board and batten. Similar material is used for flooring, the floors being about 2 feet above the ground surface. The building is not ceiled. The roofing is either of shingles or tarred paper. The windows are small. Ten rows of 10 rooms each were erected in 1916 out of hollow tile. The tile is a hollow block of terra cotta with 5 by 12 inch outer face and 8 inches thick, which determines the thickness of the wall. These rows are cemented inside, both floor and walls. The Negro occupants do not like these barracks, and complain of dampness, the management states, and declare that living in them induces rheumatism.

The number of occupants varies with the productive activity of the plant. When the plant is operating with full force, four men are allotted to a shanty. Here the men used to be permitted to eat, sleep, cook, and do their washing; now, however, these quarters are exclusively for sleeping purposes.

The furnishings are primitive in the extreme. For sleeping purposes there are two 2-high bunks, the space between the lower and



FIG. 74.—EASTERN STEEL TOWN, COMMUNITY C. RECENTLY CONSTRUCTED HOLLOW-TILE, SEMIDETACHED HOUSES.

Pictures taken at time of construction, which accounts for condition of street.



FIG. 75.—MODERN HOLLOW-TILE BARRACKS, WITH CONCRETE FLOORS.

upper being slightly larger than required for a man of ordinary size to crawl in. The men provide not only mattresses and bedding, but also the stove and the necessary fuel. Meals can be had at a reasonable price in the several mess houses located among the several groups of shanties. These mess houses are not operated by the steel company, but it exercises supervision over them as to charges and as to conduct. Some of these mess houses are operated by men employed in the company's office. The water supply for these shanties is obtained from outside hydrants. The newer hollow-tile barracks contain each a lavatory sink. The company has installed a shower bath in a small house adjacent to the shanties, and all employees are privileged to use it. Both hot and cold water are supplied at the newer groups of barracks.

The company does not keep the surroundings of the barracks as clean and tidy as the rest of the village, nor does it provide janitor service for keeping the inside of the barracks clean and sanitary.

The cost of each frame shanty of one room is $50, and the rent is $39 per person per year, which almost makes up the total cost. The cost of each room in the hollow-tile rows is $250, and the possible $39 received for each would represent 15.6 per cent on the investment. Inasmuch as four men ordinarily occupy each shanty the possible rental would be four times the sum indicated above, or $156 a year for each one-room shanty.

A view of the barracks is shown in Figure 75.

On the whole, the barracks are not a satisfactory method of housing single men. The superintendent of the housing and real estate department of the company stated that boarding and rooming houses with good janitor service and careful supervision would probably be the best method for housing that class of men.

BOARDING HOUSES.

There are 13 large detached houses used as boarding houses. Three date from the early days of the plant, two of which are of frame construction and the third of brick. The latter is located in the better-kept section of the village and is used by the office and technical staff and the school-teachers. Ten boarding houses were erected in 1916, being of hollow tile with stucco exterior. These will be occupied by skilled mechanics. Four of them, having 14 rooms each, cellar, modern equipment, i. e., plumbing, hot and cold water, but stove heated, cost $16,250 each. Each house is rented at $30 a month to a separate family, which operates it. Six houses containing 18 rooms each have all modern equipments and furnace heat. For each of these rental is $45 a month. The charges for board and room in these boarding houses are supervised by the company. Each lodger is charged from $9 to $10 a week for board and room. One or two

persons are accommodated in each room. Each house can take as boarders, however, considerably more men than it can accommodate in rooms.

The picture and plans of one of the recently constructed boarding houses are shown in Figure 76.

COST OF MAINTENANCE.

The company which controls community C had at the time of the inquiry invested in its houses about $875,000. This amount is 29.8 per cent of its average annual pay roll for the five years 1911 to 1915. The company accommodates about one-third of its employees in its houses.

The rent receipts in 1914 amounted to $87,309; in 1915, $92,371. Hence the gross return on the investment of $875,000 was 10 per cent in 1914 and 10.6 per cent in 1915. Charged against the rent receipts in 1914 was a sum of $86,979 and in 1915, $86,100. These charges included all expense, except interest on the capital investment, that is, repairs to dwellings, house management, charges to unoccupied property, town improvements and management, water supply, streets, sewers, fire and police protection, and schools. The excess of the rent earned over and above expenditures for the above items amounted in 1914 to $330 and in 1915 to $6,271. This would have left a net return in each year of less than one-tenth of 1 per cent on the investment in 1914 and seven-tenths of 1 per cent in 1915.

An examination of the distribution of the different items of 1915 shows that 59.2 per cent of the expense was for house repairs, one-tenth of 1 per cent for house management, and 36.8 per cent for community expenses, which would be ordinarily shown by taxation, including such items as town management, water supply and sewers, street care and improvements, police and fire protection, and schools. The distribution of expenses per month in 1915 is as follows:

TABLE 108.—DISTRIBUTION OF EXPENDITURE FOR MAINTENANCE, REPAIRS, ETC., AVERAGE PER MONTH, 1915, IN COMMUNITY C—NORTHERN IRON AND STEEL TOWNS.

Item of expense.	Amount.	Per cent.
Repairs to dwellings	$4,248.05	59.2
House management	10.18	.1
Charges to unoccupied property	276.94	3.9
Total	4,535.17	63.2
Town, general	681.34	9.5
Water supply	907.89	12.6
Streets	228.14	3.2
Sewers	82.21	1.1
Fire department	212.21	3.0
Police department	250.39	3.5
Schools	277.74	3.9
Total	2,639.92	36.8
Grand total	7,175.09	100.0

COMMUNITY D.

This company, which has long been established in one of the eastern States, did not begin housing its employees until 1906. The purpose was to have the employees live near the works, as the nearest town was several miles away, and it had been found that by frequently being late employees were losing time in starting work. This drawback has now been obviated, and it is felt that a more efficient labor force has been secured.

At the time of this survey, late in September, 1916, the company employed approximately 2,000 men and housed 800, or 40 per cent, of that number.

Although situated in rolling country presenting artistic possibilities for layout, the town is nevertheless laid out in rectangular fashion. The company notes as an advantage the fact that by using the rectangular plan of layout every house can be given a southern exposure. Wide streets have been provided, the main street being 100 feet wide from lot line to lot line, and other residence streets are 80 feet wide. There is a central parking on the two main streets. Hedges have been planted by many tenants in the better part of the town, the company paying half the expense. In the rear of the row houses gardens are cultivated. The town on the whole has made excellent use of trees, vegetation, and natural growth for its beautification.

By reason of the fact that it owns all land and improvements, provides playgrounds and hospitals, shares the expense of the erection of schools, and performs such functions as street cleaning, street lighting, and police and fire protection, the company completely controls the community. For much of its recreational activity, however, the town depends upon two cities, one about 4 miles away and having a population of 6,000, the other about 10 miles away and having a population of 100,000.

HOUSES OF THE COMMUNITY.

As a company town the community is interesting as having constructed practically none but permanent fire resisting buildings of brick or brick and tile combined. The result has been, as shown below, an extremely low maintenance cost. All houses are plastered and papered inside. The lower rental houses for the less skilled labor are stove-heated, are equipped with sink and running water in the kitchen and a water-closet, and are lighted by gas. The better-class houses have three-piece bathrooms; some also are equipped with laundry tubs and have both gas and electrical connections. The details concerning the houses of the community are contained in the table below.

TABLE 109.—NUMBER, SIZE, AND COST OF DWELLINGS, AND RENT PER MONTH, BY TYPE OF DWELLING AND MATERIAL OF CONSTRUCTION, IN COMMUNITY D—NORTHERN IRON AND STEEL TOWNS.

Type and material of construction.	Number of dwellings.	Year of construction.	Number of rooms per dwelling.	Cost per dwelling.	Rent per month.	Per cent annual rental forms of house cost.
Brick:						
Row	[1] 146	1906	4	$1,545	$9.50	7.4
Do	[2] 8	1909	10	3,530	18.00	6.1
Do	[1] 114	1914	5	1,600	10.00	7.5
Semidetached	[1] 48	1906	6	1,590	10.50	7.9
Do	[3] 24	1907	9	2,660	16.00	7.2
Do	[3] 64	1907	6	2,400	13.00	6.5
Do	[4] 6	1909	9	4,100	22.00	6.4
Do	[4] 4	1909	9	3,470	19.00	6.3
Do	[4] 6	1910	9	3,400	18.00	6.4
Do	[4] 8	1910	9	3,360	19.00	6.8
Brick and tile:						
Row	[5] 60	1913	6	1,950	11.00	6.8
Semidetached	[5] 20	1913	8	2,500	15.50	7.4
Do	[5] 24	1913	6	2,100	14.00	8.0
Average				1,942	11.57	7.2

[1] With water-closet, sink, sewer connection, gas.
[2] With bathtub, sink, sewer connection, hot water, laundry tub, gas, electric light.
[3] With bathtub, water-closet, sink, sewer connection, hot water, gas.
[4] With bathtub, sink, sewer connection, hot water, gas, and electric light.
[5] With bathtub, water-closet, sink, sewer connection, hot water, gas, electricity.

ADMINISTRATION AND MAINTENANCE.

The company has invested in its housing undertaking approximately $1,500,000, of which $1,040,000 represents the cost of the houses, the balance being the cost of outside improvements, such as sewers, grading, paving, gas, water, electric light, etc. An additional $20,000 should be added as the cost of the land devoted to housing, making a total investment in housing of $1,520,000. The average annual rent receipts for the five-year period 1911–1915 amounted to $61,012, a gross return of 4 per cent of the investment. As stated before, on account of the substantial construction of the houses the maintenance cost appears to be extremely low. The average charges to maintenance for the five-year period 1911–1915 absorbed only 10 per cent of the average annual rent receipts for that period. These expenses of maintenance include repairs to houses and fences and general administration, but not interest or insurance. The company carries no insurance on its houses.



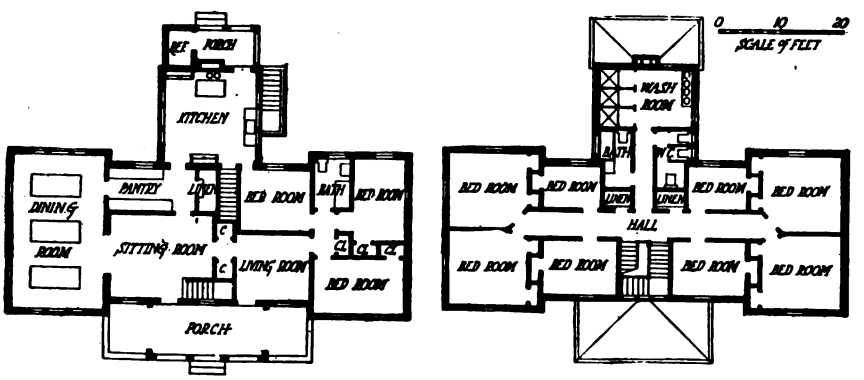


FIG. 76.—EASTERN STEEL TOWN. COMMUNITY C. PICTURE AND PLANS OF BOARDING HOUSES FOR EMPLOYEES.

Third-floor plan similar to second.



FIG. 77.—EASTERN STEEL TOWN. COMMUNITY D, FRONT OF LOW-RENTAL ROW HOUSES.

Trees put in by company.



FIG. 78.—EASTERN STEEL TOWN. COMMUNITY D.

Rear of Fig. 77. Note effect of uniform fencing.



FIG. 79.—ALLEY IN EASTERN STEEL TOWN. COMMUNITY D.

About 6½ feet wide, with 19-inch gravel walk on either side.

TABLE 110.—RELATION OF RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE, 1911 TO 1915, IN COMMUNITY D—NORTHERN IRON AND STEEL TOWNS.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$47,698.90	$6,056.45	13
1912	57,179.25	5,910.68	10
1913	64,478.50	5,901.52	9
1914	67,810.61	5,615.05	8
1915	67,891.50	6,878.49	10
Average	61,011.75	6,072.44	10

As already indicated, the company provides houses for its higher officials and for both skilled and unskilled workers, the rents being fixed to meet the ability of the different classes of tenants to pay. Contrary to most company practice, this company collects its rent monthly at its real estate office and does not deduct it automatically from the wages of an employee unless he so requests. The rent of the houses includes, besides the use of the house, provision of water.

This company secures proper maintenance of its properties and premises by itself performing such work as the maintenance of lawns, provision and upkeep of fences, the provision of garbage pails in the rear alleys, and regular collection of the contents. The company does not think that prizes for gardening help very materially, but the company itself has done the work of putting out trees, evergreens, and shrubs.

Certain rules contained in its rental lease are probably also instrumental in securing good maintenance of the premises. The following is copied from the company's rental lease:

> And the said tenant hereby agrees and consents to rent said house subject to the following rules and regulations:
>
> 1. He will provide a galvanized-iron garbage can and place all kitchen and table refuse therein. Ashes, tin cans, waste paper, and rags to be placed in a separate galvanized can. These cans to be put in the alley daily before the regular time of collection.
>
> 2. No kitchen refuse or solid matter of any kind to be emptied into water-closet. He will provide a suitable toilet-paper rack, to be fastened to side of toilet room, and keep same provided with toilet paper. The expense of repairing any damage to or stoppage of toilet caused by violation of this rule may be charged to him.
>
> 3. Any need of repairs, such as broken windows, broken doors, frozen water pipes, or stoppage of toilet, or any other damage, to be reported to the office of the company within five (5) hours after such breakage or stoppage shall occur.
>
> 4. Said house may be inspected at any time by a representative of the company.
>
> 5. For a violation of any of these rules and regulations, the tenancy hereby created shall cease, determine, and end, and said company, by itself or its authorized agent, shall be the sole judge of any such violation.

No house may be occupied by more than seven adults. Keeping chickens is prohibited.

COMMUNITY E.

In this community housing was begun in 1901, two years after the establishment of the plant. Two housing districts were established about a mile apart, but in close proximity to the plant itself, one for the unskilled, low-paid workers and the other for the higher-paid and more skilled employees. The community is situated about 3 miles from a populous city, with which it is connected by regular and frequent trolley service, the trip consuming about 25 minutes each way.

The blocks are laid out in rectangular fashion, that being in the company's opinion the most natural way. The streets are ample in width, 100 feet from building line to building line, a width of 30 feet being paved. The sidewalk is 4 feet wide and a 3-foot strip is left between the curb and the sidewalk for parking. The building line is 35 feet back from the curb.

The steel-manufacturing company which controls the community, employed in October, 1916, 7,631 workmen and housed 2,920, or 38.3 per cent of its total force.

Practically all of the houses which the company has erected are brick rows. All houses have cellars. With the exception of 61 dwellings heated by hot water in the new village where the higher-paid employees are housed the houses are heated by stoves. The houses in the new village have three-piece bathrooms and are lighted by electricity. The houses in the old village where the low-paid, unskilled workmen are housed are equipped with water-closets and sewer connections only.

The principal data concerning the houses of the two villages are contained in the following tabulation:

TABLE 111.—NUMBER, COST, AND RENTAL OF DWELLINGS IN COMMUNITY E—NORTHERN IRON AND STEEL TOWNS.

Description and type of dwelling.	Number of dwellings.	Dimensions of dwelling.	Number of rooms per dwelling.	Cost per dwelling.	Rent per month.	Per cent annual rental forms of house cost.
New village:						
Row, brick, two story [1]	60	17 by 30 feet..	8	$2,000	$12.50	7.5
Detached, frame, two story and attic [1]	15	26 by 30 feet..	9	3,000	19.50	7.8
Semidetached, frame, two story and attic [1]	46	17 by 48 feet..	[2] 9	4,000	16.50	4.9
Old village:						
Row, brick, two story [3]	142	17 by 30 feet..	5	1,500	7.50	6.0
Do. [3]	291	17 by 25 feet..	4	1,200	6.50	6.5

[1] Plastered, papered or calcimined, and natural pine finish inside, frame verandas, wood houses clapboarded outside.
[2] Eighteen of the 46 dwellings have 10 rooms.
[3] Plastered, papered or calcimined, and painted white trim inside.

The company reports the total original cost of all its houses as $880,734. Improvements, such as grading and filling, sewer and water system, paving, fire protection, installation of lighting system, etc., cost an additional $76,556. The total original cost of the land devoted to housing development is $77,934.

The cost per lot of all improvements installed was $132. Lots of row houses are 100 feet deep and 17 feet wide; single detached houses have lots 40 feet wide.

Data furnished by the company concerning the cost of maintaining its housing property indicate that for the five-year period, 1911–1915, 45 per cent of the annual average rent receipts have been expended for labor and material for repair and upkeep of the houses, garbage collection, sewage disposal, furnishing of electric power and water, and payments for taxes and insurance. The outlay for each year is shown in the following table:

TABLE 112.—RELATION OF RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE, 1911 TO 1915, IN COMMUNITY E—NORTHERN IRON AND STEEL TOWNS.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$45,305.11	$21,712.15	48
1912	48,152.97	23,011.74	48
1913	54,578.34	26,868.54	49
1914	56,469.92	24,313.44	43
1915	55,992.04	22,096.91	39
Average	52,099.68	23,600.56	45

The average annual rent receipts for the five-year period in question represent a gross return of 5.9 per cent on the original cost of the company's houses ($880,734). Calculated on the original cost of the houses, cost of improvements, and land costs, the rent receipts for the same period represent a return of 5 per cent.

On the whole the company's properties are well maintained; effort is made to encourage gardening and practically all of the tenants respond. The local city authorities collect the garbage once a week.

COMMUNITY F.

This community is one of two communities established by the same company to house the employees of its two plants. These plants are located in different States. It is one of the few companies disclosed by the Bureau survey which has given attention to the housing of the low-paid unskilled workers. At the time of the survey the company housed only a small proportion of the labor force of each of its plants.

At its plant in Indiana, for instance, it accommodated in company houses 700 employees out of a total of approximately 2,000—that is, 35 per cent. At its plant in Pennsylvania it housed approximately 2,500 employees, or 35.7 per cent of the total of 7,000.

The company has given little attention to the social phase of its community work. Neither playground nor hospital is provided at its Indiana plant; at the Pennsylvania establishment the playground has been allowed to deteriorate. No street cleaning is attempted at its Indiana plant, where the houses are located in the immediate vicinity of the plant. The courtyards are uncared for; no fences are provided to encourage gardening, and streets are left unpaved.

On the other hand, at its plant in Pennsylvania, maintenance is very much more carefully looked after. Each of the detached houses, which are provided for the somewhat better class of employees, has been furnished with a garbage can. At least once a week the company collects all rubbish and garbage. Rubbish is raked up regularly. In the row houses the garbage and rubbish are deposited in a box placed in the rear of alternate rows. At each weekly cleaning the boxes are limed and thus kept more or less sanitary.

There are two distinct parts of the village of the company located in Pennsylvania: (1) The better-class residence section, where single or detached houses have been constructed, paved streets laid out, with sidewalks and considerable parking, and lots 50 feet wide provided; (2) the foreign quarter, in which no definite lot areas have been laid out with a street 48 feet wide from building line to building line. Here the entire section has been cindered and no gardens are allowed.

The houses of the district provided for the skilled American employees are provided with sink, hot and cold water, and water-closet in the cellar. This is true of 125 five-room dwellings, while 75 other five-room dwellings are provided with three-piece bathrooms with hot and cold water. The houses in this section of the village are heated by gas grates. They are located on lots 25 by 100 feet. All these are frame houses constructed in 1902 at costs and rentals shown in Table 113.

Illustrations of the above houses may be seen in Figures 81, 82, and 83.

The houses in the foreign quarter may be described as shanties, some built of board and batten and some of matched siding ceiled inside with ordinary flooring. Some of the houses have been papered by the tenants. All these are row houses. The accommodations in these houses consist of a water hydrant in the yard and a stove for heating purposes.



FIG. 80.—EASTERN STEEL TOWN. COMMUNITY E. UNIFORM BRICK ROWS.

Effect of vegetation offset by lack of uniform fencing.



FIG. 81.—EASTERN STEEL TOWN. COMMUNITY F.

Front view of foreign laborers' row houses.



FIG. 82.—REAR OF ROW SHOWN IN FIG. 81.



FIG. 83.—EASTERN STEEL TOWN. COMMUNITY F. FRONT VIEW BETTER CLASS ONE-FAMILY HOUSES.

There are 264 dwellings of rows shown in Fig. 81, and 200 single houses in Fig. 83; 206 row dwellings built in 1904, 58 in 1902; single houses built in 1902. Rows have 4 rooms per family, 2 up and 2 down; no inside conveniences; cost $330 per dwelling or family unit; rent $4 per month per family for those built in 1904, and $6 for those built in 1902. Single houses have 5 rooms and cellar: 125 have kitchen sink, sewer connections, water-closets in cellar, and hot-water connections; 72 renting for $10 a month and 53 for $12 per month, and each costing $1,150; 75 have bathtubs, water-closets, and sewer connections, kitchen sinks and hot-water connections, each renting for $14 per month and costing $1,500. Row houses heated with stoves; single houses with gas grates.

TABLE 113.—NUMBER, COST, AND RENTALS OF DWELLINGS, BY CLASS OF LABOR HOUSED AND SIZE AND TYPE OF DWELLING, IN COMMUNITY F—NORTHERN IRON AND STEEL TOWNS.

Class of labor, and size and type of dwelling.	Number of dwellings.	Year of construction.	Cost per dwelling.	Rent per month.	Per cent annual rental forms of house cost.
American labor:					
Frame dwellings—					
5 rooms	72	1902	$1,150	$10	10.4
Do	53	1902	1,150	12	12.5
Do	75	1902	1,150	14	14.6
Foreign labor:					
Row dwellings—					
4 rooms	206	1904	330	4	14.5
Do	58	1902	330	6	21.8

COMMUNITY G.

The housing conducted by the company at its Indiana plant is distinctly inferior to that at its establishment in Pennsylvania. In Indiana only a single type of house has been provided—namely, row dwellings of frame of the "two-flat" type—that is accommodating one family on the ground floor and another on the second floor. As a matter of fact, the second-floor dwellings have not been occupied except in rare instances. The houses have not been kept in repair and are very much in need of paint. The tar roofs have not proven satisfactory, the heat of the sun melting the tar and leaving the paper exposed. The interior of the houses is ceiled and generally painted. A few of the tenants have papered their own houses.

The streets in the community have no gutters and few sidewalks; courtyards are bare and uncared for; in many places the sand has drifted badly. On the whole, the community has an air of extreme desolation.

The rents charged are unusually high. Each two-room flat rents for $6 per month, or $3 per room. This rental applies to the dwellings of 10 "two-flat" rows accommodating 20 families to the row. The four-room dwellings, of which there are 100, rent for $10 a month.

Hydrants are provided in the yards. Each hydrant supplies several houses. The rows of privies at the rear of the dwellings, only one to every two families, are dilapidated and unsightly. The privies are so-called "sewer" privies, connected with the sewer by an 8-inch pipe, which is flushed every four or five hours by water from the community water system. For the purpose for which it is designed the sewer pipe should be at least 18 inches in diameter.

The soil of the region is ill adapted for gardening, and, furthermore, gardening is not encouraged by the company. Many tenants have built fences around their gardens and have constructed duck, chicken,

and hog yards. But this, being uncontrolled and unregulated, has added to the unsightly as well as insanitary condition of the community.

COST OF MAINTENANCE.

The same subsidiary company conducts the housing work at both establishments of the company. It has reported its financial operations covering both establishments in a single statement.[2] From the statement the following items of interest are noted:

Original cost of land devoted to housing		$33,000
Original cost of dwellings (not including outside improvements)		190,181
Cost of outside improvements:		
Grading	$4,673	
Sewers and drains	7,400	
Sidewalks	1,575	
		13,648
Total		236,829

The relation of maintenance and rent receipts for the years 1911–1915 are shown in the following tabulation:

TABLE 114.—RELATION OF RENT RECEIPTS TO EXPENDITURE FOR MAINTENANCE, 1911 TO 1915, IN COMMUNITY G—NORTHERN IRON AND STEEL TOWNS.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$11,351.40	$15,032.12	132.4
1912	12,759.60	17,137.48	139.2
1913	20,690.50	12,800 59	61.9
1914	21,990.35	10,562.62	48.0
1915	16,562.00	8,582.13	51.8
Average	16,670.77	12,947.41	77.7

[2] Cost of water lines included in the property count of the principal company and not reported by the subsidiary land and improvement company.

The distribution of maintenance expense among the different items which are included in that expense is as follows:

TABLE 115.—DISTRIBUTION OF ANNUAL CHARGES AND EXPENDITURE FOR MAINTENANCE, 1911 TO 1915, IN COMMUNITY G—NORTHERN IRON AND STEEL TOWNS.

Item of expenditure.	1911		1912		1913		1914		1915	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
Taxes	$1,412.76	9.4	$1,246.92	7.3	$1,667.66	13.0	$1,724.57	16.3	$2,240.20	26.1
Insurance	1,610.84	10.7	1,607.74	9.4	1,614.51	12.6	1,611.28	15.3	1,611.42	18.8
Lighting	1,407.36	9.4	1,605.95	9.4	2,679.67	20.9	2,735.36	25.9	2,018.90	23.5
Legal expense	47.25	.3	173.25	1.0	25.15	.2	70.50	.7	82.10	1.0
Office expense	5.89	.1	42.50	.2	18.24	.1	63.20	.6	9.93	.1
Water	739.94	4.9	650.55	3.8	530.43	4.2	796.17	7.5	738.47	8.6
Cleaning	329.25	2.2	322.15	1.9	480.44	3.8	391.50	3.7	341.00	4.0
Salaries	510.00	3.4	525.00	3.0	540.00	4.2	540.00	5.1		
Incidentals	4.70	(1)	11.81	.1	4.30	(1)	5.00	.1		
Police	950.60	6.3	1,000.90	5.8	963.75	7.5	956.40	9.1	896.10	10.4
Repairs:										
Houses	245.48	1.6	1,820.26	10.6	3,223.47	25.2	1,007.68	9.5	365.73	4.3
Miscellaneous	658.45	4.4	388.74	2.3	877.08	6.9	625.27	5.9	278.28	3.2
Interest	7,109.60	47.3	7,741.71	45.2	175.89	1.4	35.69	.3		
Total	15,032.12	100.0	17,137.48	100.0	12,800.59	100.0	10,562.62	100.0	8,582.13	100.0

[1] Less than one-tenth of 1 per cent.

With a total original investment of $236,829, including land and improvements, and with average rent receipts for the five-year period (1911–1915) of $16,670.77, the gross return on the investment has been 7 per cent. This gross return was not sufficient to meet all maintenance expenses in 1911 and 1912, due to the heavy interest charges as indicated in Table 116. For the five-year period (1911–1915) taxes, insurance, and maintenance items have absorbed almost four-fifths (77.7 per cent) of the returns from rent.

CHAPTER XV.—MISCELLANEOUS INDUSTRIES.

As already brought out, a certain group of miscellaneous industries have been considered together, since housing conditions in each have been represented by only a single community. Housing in these industries is of a much higher quality on the whole than in those industries where company housing is a characteristic feature, as, for instance, the mining, the iron and steel, and the textile industries. The houses are on the whole larger, have greater variety and individuality, are more permanent and substantial, cost more, and rent at higher rates. A relatively larger proportion have bath and running-water facilities.

The employees catered to are the more skilled and higher-paid workers and office staff. There are fewer employees per house than in the other industries; the maintenance of premises and houses is somewhat more careful; the housing business on the whole is somewhat more specialized.

Table 116 shows for certain communities the number of employees housed and the number and size of the dwellings provided.

TABLE 116.—NUMBER OF EMPLOYEES, NUMBER HOUSED, AND NUMBER AND SIZE OF DWELLINGS PROVIDED, IN SIX COMMUNITIES—MISCELLANEOUS INDUSTRIES.

Community.	Number of employees.	Number housed.	Number of dwellings.	Number of rooms.	Average number of rooms per dwelling.
Community No. 1	1,800	500	237	1,273	5.4
Community No. 2	2,700	900	663	4,249	6.4
Community No. 3	2,475	1,000	260	1,706	6.6
Community No. 4	10,885	1,157	758	3,884	5.1
Community No. 5	2,500	600	262	1,276	4.9
Community No. 6	1,600	1,600	264	1,063	4.0
Total	21,960	5,757	2,444	13,451	5.5

RENT.

In the following table is shown the number of dwellings of specified size renting at each classified amount per month:

TABLE 117.—NUMBER AND PER CENT OF DWELLINGS OF EACH SPECIFIED NUMBER OF ROOMS RENTING AT EACH CLASSIFIED AMOUNT PER MONTH—MISCELLANEOUS INDUSTRIES.

NUMBER.

Rent per month.	Houses having—								Total.
	2 rooms.	3 rooms.	4 rooms.	5 rooms.	6 rooms.	7 rooms.	8 rooms.	9 rooms and over.	
Under $3	1	3	3	10					17
$3 and under $4			9	30					39
$4 and under $5			5	229	90	64	2		390
$5 and under $6	5	20	39	23	36	37			160
$6 and under $7		93	46	59	52	3	17	1	271
$7 and under $8		31	365	72	6	42	94		610
$8 and under $9		10	79	13	46	32	1	1	182
$9 and under $10			109	49	19	2	10		189
$10 and under $11		15	28	126	8	18	4	2	201
$11 and under $12			18	13	4	9	1	1	46
$12 and under $14		3	2	2	234	34	11	9	295
$14 and under $16		2	10	30	57	13	83	4	199
$16 and under $18				2	67	18	2	3	92
$18 and over			176	188	183	132	33	14	726
Total	6	177	889	846	802	404	258	35	3,417

PER CENT.

Under $3	16.7	1.7	0.3	1.2					0.5
$3 and under $4			1.0	3.5					1.1
$4 and under $5			.6	27.1	11.2	15.8	0.8		11.4
$5 and under $6	83.3	11.3	4.4	2.7	4.5	9.2			4.7
$6 and under $7		52.5	5.2	7.0	6.5	.7	6.6	2.9	7.9
$7 and under $8		17.5	41.1	8.5	.7	10.4	36.4		17.9
$8 and under $9		5.6	8.9	1.5	5.7	7.9	.4	2.9	5.3
$9 and under $10			12.3	5.8	2.4	.5	3.9		5.5
$10 and under $11		8.5	3.1	14.9	1.0	4.5	1.6	5.7	5.9
$11 and under $12			2.0	1.5	.5	2.2	.4	2.9	1.3
$12 and under $14		1.7	.2	.2	29.2	8.4	4.3	25.7	8.6
$14 and under $16		1.1	1.1	3.5	7.1	3.2	32.2	11.4	5.8
$16 and under $18				.2	8.4	4.5	.8	8.6	2.7
$18 and over			19.8	22.2	22.8	32.7	12.8	40.0	21.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

COST OF MAINTENANCE.

No general statement can be made as respects the financial phases of company housing in this group of miscellaneous industries, as no data were given by these companies on that point. However, the methods of a certain New England company which employs about 4,500 workmen and owns 210 houses may be of interest. The real-estate department of the company is run on a "business" basis. An economic rent—that is, one fixed to give a desired profit on the investment—is placed on each house, and if for any reason, as in case of accident or illness, this rental is not collected from the tenant himself, it is charged against the productive department of the establishment where the tenant is employed. The company has a special fund from which such noncollected rent is paid, the real estate department being credited with the rent as if duly received.

In addition to the usual charges for maintenance, repairs, management, expenses, taxes, and insurance, there is charged against the

rent receipts interest on a capitalization of the rent receipts at 8 per cent. No depreciation account is set up, as it is figured that the maintenance and repair sufficiently offset this. The company observes that interest charges absorb about one-half the rent receipts, repairs about one-fourth, and fixed charges—management, insurance, taxes—the remaining one-fourth.

Because of this method of accounting, actual rent receipts have not equaled the above charges to the maintenance account. During the five-year period 1911–1915 the maintenance charges constituted 119 per cent of the rent receipts, the lowest they ever reached being 102 per cent in 1911. Year by year the result has been as follows:

TABLE 118.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF A MANUFACTURING COMPANY IN THE NEW ENGLAND DISTRICT, 1911 TO 1915.

Year.	Rent.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1911	$35,825	$36,440	102
1912	43,317	50,723	117
1913	39,872	52,332	131
1914	40,903	52,812	129
1915	45,057	51,260	114
Average	40,995	48,713	119

SPECIAL COMMUNITIES.

COMMUNITY H.

The housing work of this company is of particular value as showing the possibilities of the use of simple architecture in conjunction with careful town planning. The community is located about 35 miles from Boston and is not easily accessible. The establishment upon which it depends has about 2,500 employees and houses only 826, or about one-third of that number. The community is organized as a New England town, and has a municipal water and sewer system and electric light furnished by a public-service corporation, public school, public playgrounds, and a hospital. The company as such attends only to such matters in connection with its housing as garbage and sanitary collection. Company control is indirect and lies in the fact that almost all of the taxable property in the community belongs to the company. Practically all male inhabitants of voting age in the village are employees of the company, and elections are thus wholly within the control of the company. The management of the community is paternalistic, a fact to which strong objection was taken by some of the employees interviewed.



FIG. 84.—COMMUNITY H. EARLY TYPE, DETACHED FRAME HOUSE OF 6 ROOMS AND CELLAR.

Stove heated; rent $2.20 per week.



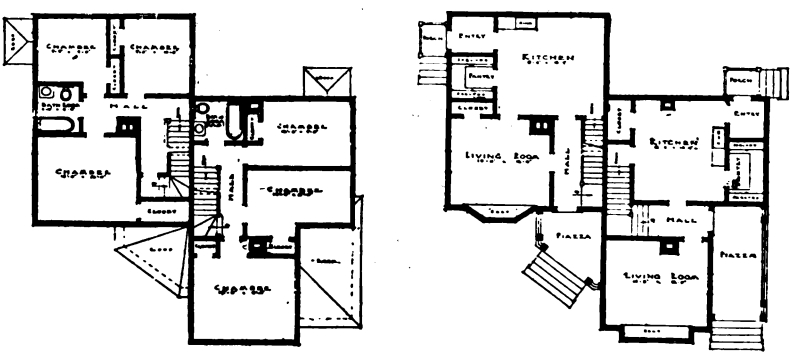


FIG. 85.—COMMUNITY H. SPECIAL CORNER FRAME HOUSE.

Semi-detached, 5 rooms and bath, cellar, and furnace. Cost in 1914, $2,400 a side; rent $11.60 per month.



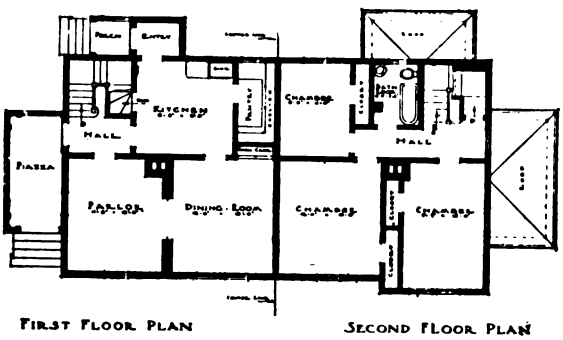


FIG. 86.—COMMUNITY H. TYPICAL SEMIDETACHED FRAME HOUSE.

6 rooms, bath, cellar, and furnace. Cost in 1914, $3,300 a side; rent $16.40 per month.



FIG. 87.—COMMUNITY H. GROUP PICTURE OF HOUSES IN THE COMMUNITY.

Variation secured by roof lines, porch design, and arrangement and use of stucco work.



FIG. 88.—COMMUNITY H. STUDY IN PORCH VARIATION TO RELIEVE MONOTONY OF UNIFORM TYPE AND PLAN OF HOUSE.



FIG. 89.—COMMUNITY H. FLAT ROW FOR FOREIGN LABORERS.

Brick construction. Accommodates 8 families, 4 rooms to the family; modern improvements and electric light; stove heat. Rent $5 to $6 a month per family.

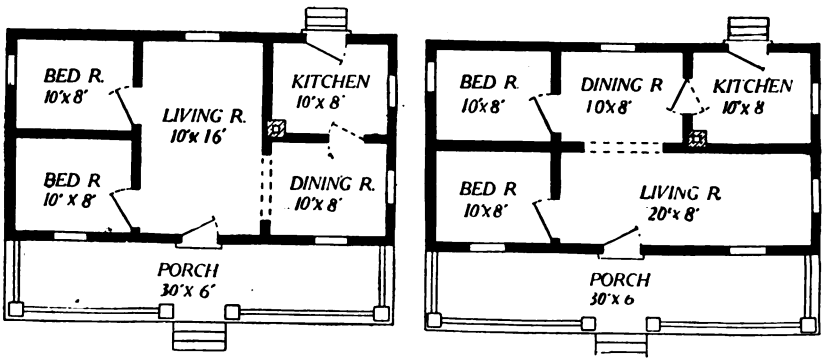


FIG. 90.—COMMUNITY I. PLANS OF 5-ROOM MILL-CUT FRAME BUNGALOWS.

Stove heat; sink and hot-water back to stove in kitchen, water-closet addition, built off kitchen, not shown. Cost in 1915, $927; rent $7 per month.

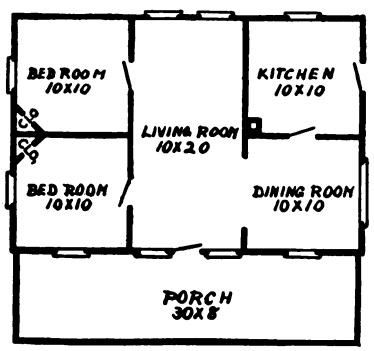


FIG. 91.—COMMUNITY I. FLOOR PLANS OF MILL-CUT BUNGALOW OF 5 ROOMS AND CELLAR.

Electric light, stove heat, hot water back in kitchen, water-closet in addition off kitchen, not shown. Cost in 1915 $1,382; rent $10 per month.

THE COMPANY TOWN.

English garden city town planning has been carried out in the community, and the landscape gardening has been particularly well done. The streets follow the natural contour of the site, and efforts have been made to avoid any tendency toward uniformity of architecture. Residences are restricted to certain parts of the community and houses of a special type erected. The section inhabited by Polish operatives is situated at one edge of the community.

The streets are almost uniformly 50 feet wide and laid with sand and gravel; some are macadamized. Sidewalks are of a rough asphalt composition. Generous provision has been made for parking, and trees are very plentiful. In some parts of the residence section no alleys have been provided, but open green spaces have been left back of the houses. The appearance of back yards and alleys is further improved by the fact that no outhouses, garages, fences, or gardens are permitted on the lot. Allotment gardens are, however, given in various parts of the community.

TYPES OF HOUSES.

There are two distinct classes of houses—semidetached frame dwellings of either the modernized or the early style of colonial architecture (located in the better residence section), and row houses of the brick "two-flat" style, accommodating eight families in each row.

Better-class Houses.

It has not been possible to secure complete data on the houses of this community. The information which follows is therefore only partial. Most of the houses are of frame with exterior of weather shingles and are plastered and papered inside. Houses of the earlier colonial type are of white-painted matched boarding (not siding). The frame part of all houses is painted. In some cases, following the English style, the houses have ornaments of woodwork or stucco work near the eaves. Great variety in appearance is secured by the use of different styles of porches, as many as six different types being employed. (See Fig. 88.)

The principal data concerning the houses of the better residence section are contained in the following tabulation:

TABLE 119.—COST AND RENTALS OF BETTER-CLASS SEMIDETACHED DWELLINGS IN COMMUNITY H—MISCELLANEOUS INDUSTRIES.

Type of dwelling and year of construction.	Number of dwellings.	Cost per dwelling.	Number of rooms per dwelling.	Cost per room.	Rent per month.	Per cent annual rental forms of house cost.	Sanitary equipment.
Dwellings constructed 1910.							
Frame, semidetached	10	$2,650	6	$442	$16.00	7.2	Bathtub, water-closet, sink, electricity, gas.
	10	2,650	6	442	16.40	7.4	
Brick, semidetached	20	(1)	4		5.00		Bathtub, water-closet, sink, and gas.
	20	(1)	5		4.00		
Dwellings constructed 1914.							
Frame, semidetached	20	2,650	6	442	12.60	5.7	Bathtub, water-closet, sink, and electricity.
	10	2,400	5	480	11.60	5.8	
	42	2,250	5	450	7.40	3.9	
	20	2,650	6	442	8.40	3.8	
	10	3,300	6	550	16.00	5.8	Bathtub, water-closet, sink, electricity, gas, furnace.
	10	3,300	6	550	16.40	5.9	

[1] Not reported.

Row Houses of the Polish Operatives.

As already stated, the dwellings in which the Polish employees are housed are located on the outskirts of the modern residential part of the village. This part of the development is decidedly inferior to the residence section just described. Altogether 64 dwellings are provided, in rows of eight dwellings to the row. These are two-story "flat" rows, accommodating one family on each floor. These rows were constructed in 1910 along the lines of English plans for row houses. Each family has four rooms, the upper flat renting for $5 per month, the lower one for $6 per month. The conveniences consist of a bathroom and water-closet compartment, kitchen sink, and electric lighting. These houses are heated by stoves. Plans of these houses could not be secured. The lots on which the houses stand are 75 feet deep and 16 feet wide.

The lack of fences has militated against the maintenance of neat-appearing back yards. The streets of this neighborhood are not so well maintained as those of other parts of the village.

COMMUNITY I.

The company which has established community I has undertaken housing work at three establishments, one in Virginia and two in New Jersey. Its housing work is characterized by the erection of both permanent and temporary war-time houses, by the use on a small scale of mill-cut or so-called ready-cut houses, and by careful maintenance. The housing work of the company has been considerably subordinated to its regular business, a fact which is said to find



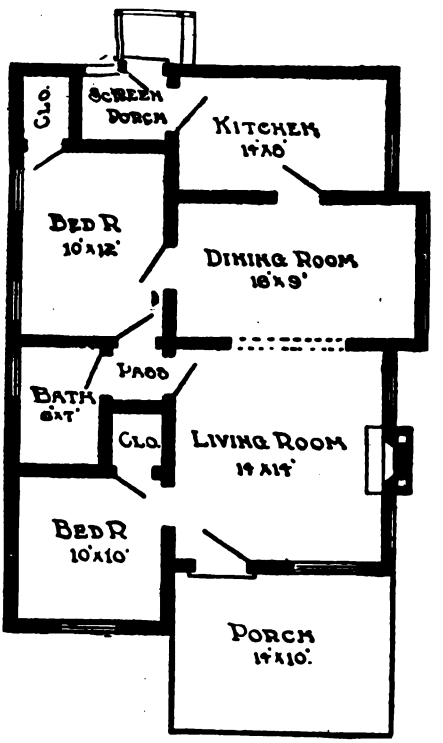


FIG. 92.—COMMUNITY I. PICTURE AND PLAN OF MILL-CUT BUNGALOW OF 5 ROOMS AND CELLAR.

Cost in 1915, $2,032; rent $13 per month. Lot 30 x 120 feet. All modern improvements, furnace heat.

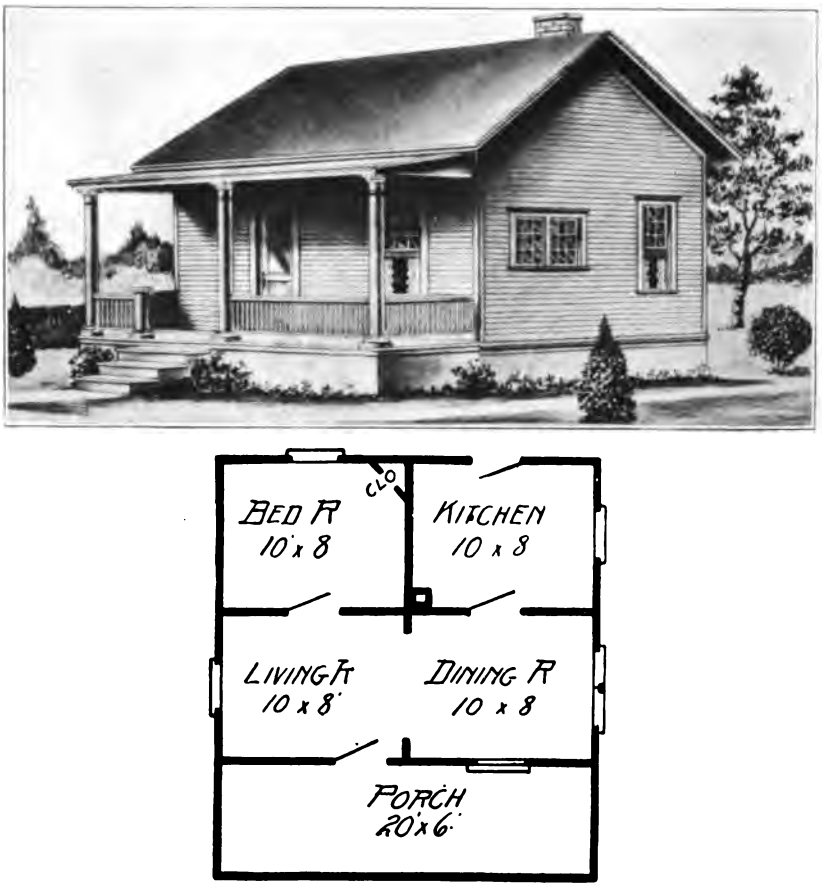


FIG. 93.—COMMUNITY I. PICTURE (IDEAL RENDERING) AND PLAN OF MILL-CUT BUNGALOW OF 4 ROOMS AND CELLAR.

Addition, on kitchen, for water-closet not shown. Cost in 1915, $769; rent $8 per month.

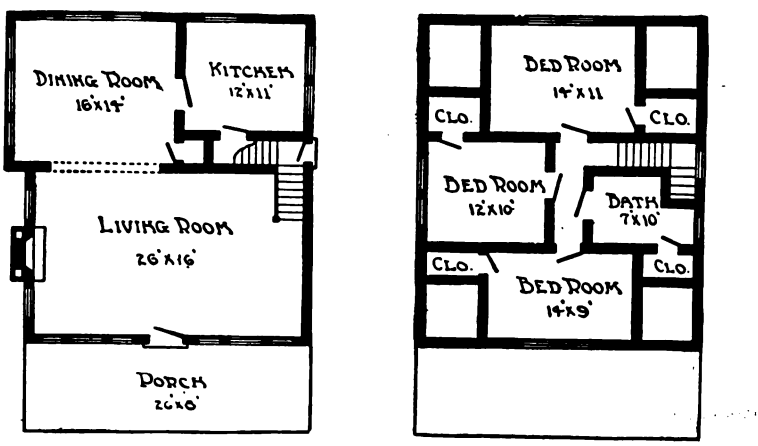


FIG. 94.—COMMUNITY I. PLAN OF STORY AND A HALF MILL-CUT HOUSE OF 6 ROOMS, BATH, AND CELLAR

Cost in 1915, $2,964; rent $20 per month.



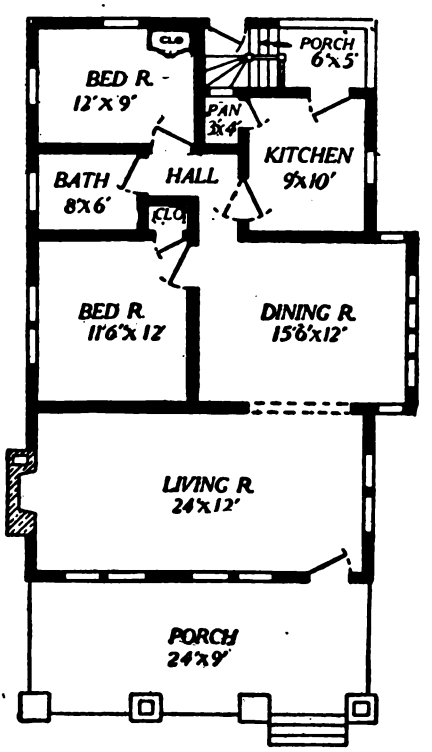


FIG. 95.—COMMUNITY I. PICTURE (IDEAL RENDERING) AND PLAN OF MILL-CUT BUNGALOW OF 5 ROOMS, BATH, AND CELLAR.

Cost in 1915, $2,507; rent $15.25 per month.



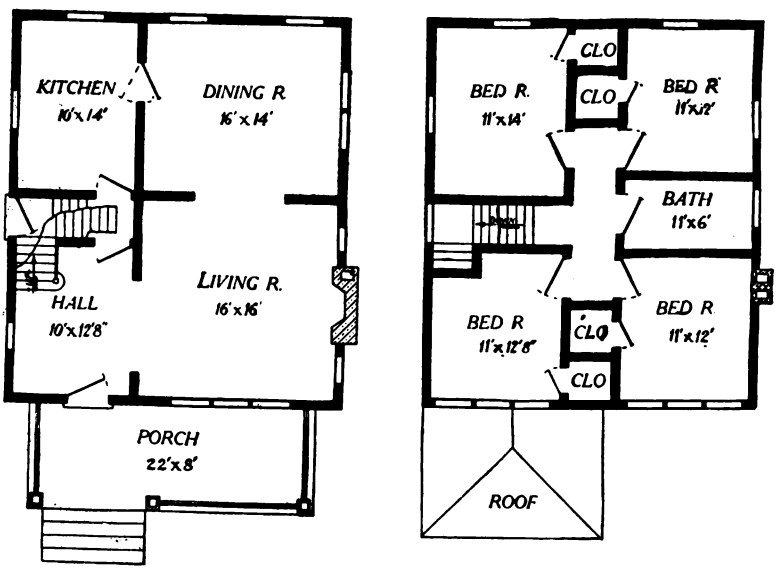


FIG. 96—COMMUNITY I. MILL-CUT HOUSE (IDEAL RENDERING) OF 7 ROOMS, BATH, AND CELLAR.

Cost in 1915, $3,650; rent, $26 per month.

its justification in the necessarily temporary character of most of the company housing. At its Virginia plant the land for housing was not bought as a part of the company's original plant development, but was purchased after the plant was started and somewhat as an afterthought. Consequently a speculatively developed town stands to-day in the midst of three distinctly separated village settlements built and maintained by the company. However, it should be pointed out that the company developments compare more than favorably with the privately exploited community in point of attractiveness of the houses, provision of sanitary conveniences, care and maintenance of streets and alleys, provision of parked roadways, and quality and character of the houses.

This may be described as a war-born community, although it was started as a permanent scheme of development in 1912. The village has been erected on undeveloped ground, generally level, but having a few ravines made by creeks. The community has much the aspect of a frontier town, a boom development where money is earned easily and spent fast. The location of the company's plant here attracted private land speculators, and local owners of what had been undeveloped agricultural land began to realize high prices on their holdings. Streets and lots were hastily laid out on improvised maps and stakes were placed to mark the location of streets and avenues of high-sounding names. And this remains to-day the stage in which most of this speculative development still finds itself.

The company itself at first bought a limited amount of land, only a trifle in excess of its plant requirements. It intended to house at first only its constructional force. It would have been quite possible for the company, it was stated, to have obtained its labor supply without any provision of cottages for married employees, but in order to reduce floaters and to secure a permanent and contented labor force it was decided to proceed with the construction of houses for married employees. To such extent has its housing work continued that out of a total working force of 12,225, early in 1918, the company housed about 4,200 married employees and 2,600 single men—that, is, 6,800 altogether, or 55.6 per cent of its entire force, a proportion higher than is generally found in manufacturing towns as distinguished from mining localities.

So far as holding its men is concerned, the company has been successful. Several instances were cited by the manager to show that the relatively better housing the company has provided has added to the efficiency of its men. Without housing in the immediate vicinity of the plant, the employees would have been forced to travel a considerable distance to and from work, since the nearest city is 9 miles distant. The round trip by street car or train costs 45 cents and consumes 70 to 80 minutes. A "jitney" service at 50 cents one

way is available; it shortens the time of travel, however, only about five minutes each way.

TOWN-SITE ARRANGEMENTS.

In laying out the town no attempt at scientific layout was made; the ground is level and permanence was not looked forward to for any considerable part of the development. The company town really consists of three distinct villages on the point of land formed by the confluence of two rivers. In addition there is a village just outside the barbed-wire fence surrounding the plant.

Few building rules are necessary, as the buildings are all owned by the company. The keeping of chickens is prohibited. While ostensibly there are no racial restrictions, it is to be observed that one village of the development is built up with free standing cottages for officials and staff employees; another contains less pretentious houses for plant employees; and a group of barrack rows is provided for single men. One end of the group of barracks is for American employees, the middle for immigrants, and the other end for Negroes. These barracks have not proved popular and many rooms in them are vacant. It was found after a time that some of these employees preferred to live in the city, where amusements and recreational facilities were more plentiful.

Water and sewer systems have been installed by the company in its villages; on the other hand these are not found generally in outlying privately-developed sections of the community. There is an electric-light system. The streets are unpaved except in the village of better-class houses where they are graveled with the exception of a width of 16 feet in the center of each street, which is paved with concrete. Sidewalks are of board, where laid, except in the better village, where concrete has been used.

Street cleaning, street lighting, fire protection, police protection, collection of garbage and rubbish, and enforcement of sanitary rules are all functions of the company. All policemen in the community are deputized company employees wearing the insignia of the company.

The schools for the children of company employees have been built by the company, but are managed and supported by the county, which will also eventually pay the capital expenditure. Churches are furnished land, water, and electricity for lighting without charge. The company supports a hospital, which is run by a charitable institution.

VILLAGE OF DETACHED HOUSES.

In the village where the officials, superintendents, technical staff, and higher-salaried employees live, there are 156 houses, having from five to seven rooms, most of which contain a cellar large enough to

accommodate a hot-air furnace. Most of the houses have all the modern improvements of bath, hot and cold water, and electric lighting. Only 13 are without bathtub and are heated by stoves instead of furnaces.

The houses are placed on lots 25 by 120 feet, except four houses for superintendents, two of which are on lots 100 by 150 feet and two on lots 50 by 100 feet.

The houses appear attractive and comfortable, and of fairly substantial construction, being sided (clapboarded) or shingled on the outside and plastered inside. The streets are well paved, trees have been planted, lawns prevail, and in the yards are bushes and flowers.

For salaried employees without family connections the company maintains a hotel. This hotel accommodates about 365, of whom 325 are provided for in separate rooms for one or two persons, and 40 sleep in dormitories. Board and room cost $6 to $8 per week.

RUBBEROID VILLAGE.

While the houses of this village are semipermanent, they are not so substantial and durable as those of the village already sketched. Here the houses are covered outside with a patent tar-paper material called rubberoid, calculated to last about seven years. The large majority of the houses are of four and five rooms and are heated by stoves. Practically all, however, have baths, sewer, and water connections, and are lighted by electricity. The lots, as a rule, are larger than in the village above described and allow plenty of space for gardening. They vary from 63 to 75 feet in width and are 100 feet deep. Each row dwelling has a lot of 21 feet in width and 68 feet in depth.

During 1918 five dormitories for men were erected in this village. These are all of temporary construction. Four of these dormitories house 92 men each; the fifth accommodates 32 men.

Women's lodging hall.—In the village described the company has erected a lodging hall or dormitory for white women employees and for the teachers in the community. This is a frame structure of 43 ordinary sized rooms. It is in charge of a matron.

BARRACK VILLAGE.

This village was built in 1914–15, inside the barbed-wire fence surrounding the plant, and consisted of bunk houses for the construction workers. These were remodeled in 1916 into one-story rows for colored families, providing two rooms for each family. During 1917–18 the company erected an additional 484 dwellings in similar rows. These are wooden, rubberoid-covered rows, having an average of 16 family apartments to the row. Each row of "apartments" consists of two lines of single rooms placed back to back, only one room of each pair of rooms on each side of the row having a door to the outside. Each

room has one exposure, one of the rooms having only a small window in it, the other having a window and the outside door. Each room is 10 feet long and 10 feet wide, with a 9½-foot ceiling. Over each pair of doors there is a small porch to be used in common by two families. Each porch has a sink for the use of the families. Altogether there are 580 apartments provided. In addition to these rows there are 48 one-room cottages renting for $3 per month each.

The houses are all heated by stoves furnished by the company and are lighted by electricity. No sanitary conveniences are provided. Can privies are used, these being emptied daily.

Bunk and barrack houses have been added recently for colored and immigrant labor. The quarters provided are sufficient to accommodate about 1,500 unmarried colored workers and 220 foreign laborers, who are accommodated in bunks placed about six to each room. The rooms are about 9 feet wide and 12 feet long and average about 10 feet in height. Rarely are the rooms fully occupied.

Cottages for Negro Workmen.

Additional cottages were in course of erection in the spring of 1918. These were hastily constructed two-room affairs, built of sheathing on frame, covered with rubberoid, ceiled up inside, and having one door and two windows each. A carpenter and a helper could erect them at the rate of one every eight days. They were meant to be used by young married Negro workmen. They are located within a wire fence just outside the plant.

Housing of Female Colored Employees.

The company began taking on colored girls in May, 1918, when a group of 12 was hired. Special row houses within the barrack village are occupied by some of the 113 on the rolls of the company. There are three groups of rows—one of 10 so-called "apartments" of two rooms each, a second of 12 two-room apartments, and a third of 16 two-room apartments, making 76 rooms altogether. No rent is charged for these.

A matron living near these apartments, who looks after the needs of the girls, is in charge. In each row two rooms are set aside as a sort of sitting room and office. Men friends of the girls will have to be entertained on the porches in the summer. The problem of entertainment in winter had not been solved at the time of the bureau's survey.

VILLAGE OF SEMIDETACHED HOUSES.

On the opposite side of the works from the barrack village and outside of the barbed-wire inclosure is another village, exclusively for white employees. Here there are 80 houses of two 3-room dwellings each, which were remodeled in 1916 from frame rubberoid-covered barracks erected in 1914–15. A washhouse, two outside toilets, and

a wash room are provided for every four dwellings. Each family pays a rent of $5 a month, which also includes steam heat from the plant. In 1917 and 1918 an additional group of 32 dwellings of the barrack type were provided. These, however, are equipped with plumbing and are heated by stoves. In addition the company has 33 bachelor houses of six rooms each. Each man pays 50 cents per room per month—i. e., $3 is returned for each house per month.

POPULATION CENSUS.

The racial composition of the community may be of interest. The following table shows the distribution of the population as white, colored, or European, by sex and age, and discloses conditions as of May 31, 1918.

TABLE 120.—POPULATION CENSUS OF COMPANY DWELLINGS AT COMMUNITY I—MISCELLANEOUS INDUSTRIES.

Item.	White.	Colored.
Dwellings for families:		
Number of dwellings occupied	1,949	515
Occupants—		
Men	3,637	515
Women	2,492	499
Children	3,352	840
Total	9,481	1,854
Dwellings for unmarried persons:		
Number of dwellings occupied	[1] 51	40
Occupants—		
Men	[2] 1,052	1,540
Women	102	56
Total	[2] 1,154	1,596
Total number of occupants	[2] 10,635	3,450

[1] Not including 12 dwellings occupied by Europeans. [2] Not including 209 Europeans.

ADMINISTRATION.

The administration of the housing work is committed to a special department, which is subordinate to the manager of the local works. A single manager is in charge; subordinate to him are three functional departments—a renting-house department, a supply department, and a sanitary department, the names of which more or less adequately characterize them. The house-renting department has 101 employees. The supply department looks after the hotels, lunch rooms, and restaurants in and about the works and is not strictly concerned with housing. The sanitary department is concerned with both plant and housing sanitation.

That part of the work of the sanitary department staff concerned with village sanitation, as distinguished from plant saitantion, occupies the partial time of a chief sanitary inspector, an inspector and time-

keeper, a foreman and inspector in one and the same person, a janitor, and 24 laborers. This department attends to garbage and rubbish collection and street cleaning in the villages.

Houses are rented only and none sold. Therefore it will be simple for the company to divert all excess rents into maintenance and to keep the premises neat and attractive. Rent includes water, electric lights and necessary lamps, and collection of garbage; coal and wood are sold at actual cost. Rent is collected monthly. In the case of employees hired at daily rates monthly deductions are made from the wages; salaried employees pay at the office as in ordinary house-renting practice, because their checks are not made out at the plant, but are issued from the head office of the company located in another city.

In event of the illness of an employee collection of rent is deferred or in special cases use of the house is given free.

The rental lease signed by each tenant employee stipulates that it is "to continue from month to month thereafter while the said party of the second part continues in the employment of the said party of the first part, at the same monthly rent and payment." Single workers and transient laborers sleeping in bunks or living in barracks are not required to sign any leases.

At first applicants for houses were encouraged to take roomers, and one who would take roomers was given preference over another who did not intend to take roomers. At present, however, applicants for houses are taken on the basis of their length of service with the company. No application for a house is filed now unless the applicant has completed a three months' period of satisfactory service. The application for a house must be made on an approved form and be signed by the plant superintendent or department head. It then goes to the village superintendent's office.

This policy of assigning houses by length of service has worked out so that employees who now secure company houses have been with the company a year or more.

MAINTENANCE.

While the company has lacked a coherent housing policy, it has excelled in the care of its community. Trees have been planted in the better residence section; the houses are well spaced, on lots 120 feet long and generally 30 feet wide, though in some instances 50 feet wide.

Various methods are employed by the company in order to stimulate and provide neat surroundings. Fences have not been put up because of the belief that unfenced lawns are more pleasing. The company offers prizes for the best kept premises and encourages gardening by supplying fertilizer at less than the haulage cost and

selling seed at cost. An employee of the company who is a florist gives instructions to those interested. He is encouraged in his work by being allowed a company house at a rental based on net cost.

Garbage is collected daily in the village of the better houses, and in the other principal villages four times a week. The tenants are required to buy ash and garbage cans either from the company, which sells them at cost plus hauling expense, or elsewhere.

COST OF MAINTENANCE.

By 1916 the company had invested in its housing enterprise at community I about $1,250,000. This does not include outside improvements nor cost of land. Outside improvements, sewers, streets, walks, parking, etc., are charged to the general construction of the Virginia plant. These improvements have been estimated at about $250 per lot or house. During 1916 rent receipts amounted to $112,813, or a gross return of 9 per cent on the investment. In the same year, after charges to maintenance had been paid, $74,799 remained to pay for taxes, interest on investment, and depreciation. This is a net return of 6 per cent on the housing investment, exclusive of land and permanent improvements. As time goes on maintenance and depreciation charges will increase rapidly. In its first year of operations, when the enterprise was in its beginnings and only a few houses were erected, charges to maintenance, which includes only upkeep, repairs, and remodeling, came to $326 and rent receipts amounted to $524. For the years 1913 to 1916 repair and maintenance charges and rent receipts have been as follows:

TABLE 121.—RELATION BETWEEN RENT RECEIPTS AND EXPENDITURE FOR MAINTENANCE OF COMMUNITY I, 1913 TO 1916—MISCELLANEOUS INDUSTRIES.

Year.	Rent receipts.	Expenditure for maintenance.	
		Amount.	Per cent of rent receipts.
1913	$524	$326	62.2
1914	1,964	250	12.7
1915	23,931	4,498	18.8
1916	112,813	38,014	33.7
Average	34,808	10,772	30.9

WELFARE WORK.

As the war progressed the company had to expand its force to meet the additional requirements of war manufacture. At the time of the investigation it found itself short of houses with no prospect of private builders stepping in to meet a situation admit-

tedly temporary in its requirements. The cost of building, the management estimated, was at least double what it was in 1915 and 1916, when most of its houses were put up. The rubberoid cottages have not been warm enough for winter weather, and the row houses have not been popular. Furthermore, a considerable extension of its welfare and recreational work, particularly among the Negroes, is being considered as highly advisable.

At present the recreational work of the company is carried on through three Y. M. C. A. organizations, one at each of the three villages where are housed most of the mechanical force, and at the village of the office staff there is a club organization of staff and clerical employees. Considerable extension work is carried on by these Y. M. C. A. organizations and three playgrounds are supervised and managed by them. Three kindergartens are conducted by the women's clubs organized among the wives and friends of Y. M. C. A. members. Trained teachers have charge of these kindergartens. The dues are $1 a month for one child, or $1.50 for two. Classes in English for foreigners have also been instituted under the direction of Y. M. C. A. teachers.

The company maintains 44 change or wash houses at different points about its works, at which are provided bathing and toilet facilities and in many instances locker accommodations. Special employees have charge of these houses, and sanitary inspection is made from time to time. Also within the plant area are mess halls and lunch rooms open to accommodate all the shifts. (The plant operates on three shifts of eight hours each.)

The company has installed a filtration plant from which water for both the village and the plant is supplied. Bubble fountains have been installed at proper places about the works. Ice for the community is manufactured in the company's own plant.

The company hospital is located within the plant yard; it is equipped with an emergency room, an ether room, an operating room, a complete X-ray outfit, four wards, and necessary domestic accessories such as kitchen, dining room, and laundry and storage rooms. The four wards consist of a ward for white patients with 22 beds, a ward for colored patients having 10 beds, an open-air ward, and a ward for contagious cases. On the staff of the hospital are 35 persons, including 11 doctors, 5 female nurses, 3 male nurses, a number of orderlies, and others. All treatment is at the company's expense.

The company has gone to very considerable expense in connection with its general recreational work at this establishment. The clubhouse of the staff and clerical employees cost approximately $40,000 and the welfare buildings for Y. M. C. A. organizations over $100,000.



Street view.



Alley view.

FIG. 97.—COMMUNITY J. BEST RESIDENCE DISTRICT WHERE STREETS AND ALLEYS ARE MACADAMIZED AND CURBED.



FIG. 98.—COMMUNITY J. DETACHED TEMPORARY FRAME HOUSES OF 5 ROOMS AND BATH.

Composition exterior; ceiled inside with tongue-and-groove material. Cost in 1915, $1,500; rent $6 per month.





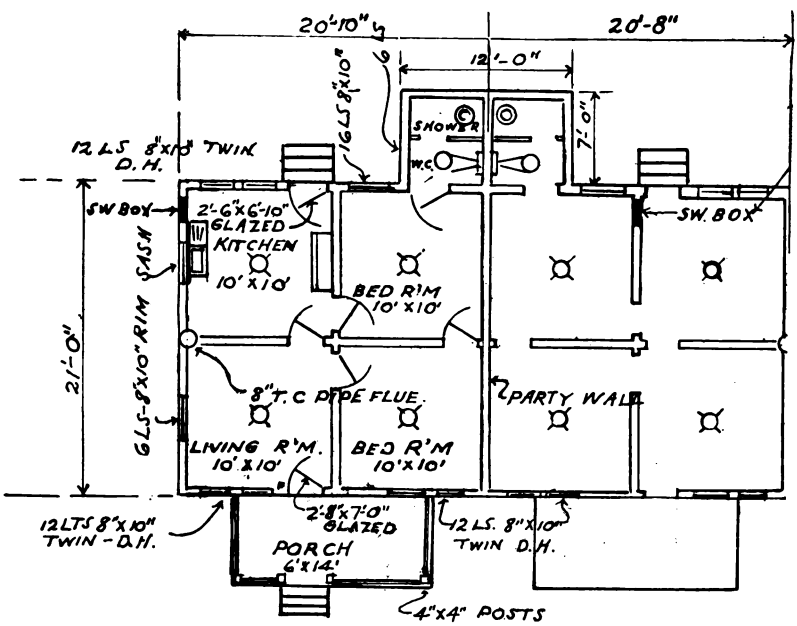


FIG. 99.—COMMUNITY J. FRONT AND REAR VIEW AND PLAN OF TEMPORARY ROW FRAME HOUSES OF 4 ROOMS AND BATH.

Composition exterior, ceiled inside with tongue-and-groove material. Cost in 1916, $995 per dwelling unit; rent $5.50 per month.

COMMUNITY J.

The housing work at this community was done by the same company as at community I. The housing at this plant, which is one of the two New Jersey plants, was begun and completed in 1915, and may roughly be divided into three groups: (1) The permanent community; (2) the temporary community; (3) the barracks. The first and second form a single village; the barracks are erected within a barbed-wire fence just outside the plant.

Out of approximately 14,000 employees in September, 1916, the company housed 4,880 in its village development and 4,650 in the barracks. Altogether, then, 68 per cent of its labor force was housed by the company at this works. The remainder of the company's force houses itself at a village and a city not far away, the former connected with community J by special workingmen's train, the latter by a ferry.

The village has been laid out foursquare on level ground. Most of the streets have a central cinder roadway 15 feet wide. In the permanent community trees have been planted along both sides of the streets. The streets are kept exceptionally clean. The lots here are everywhere 50 by 100 feet. As a rule there are no fences, although some tenants have put up very attractive ones as a part of their gardening work. Gardening is stimulated by prizes given by the company.

THE PERMANENT DEVELOPMENT.

The permanent community consists largely of so-called mill-cut houses of frame construction, sided or clapboarded on the outside and plastered on the inside. They are rather attractive in appearance and cost as much, if not more than, houses built in the ordinary fashion. All of the houses here have modern conveniences of bath, running water in the kitchen, and electric lighting. Most of them are also furnace heated. There are 194 houses in this section.

THE TEMPORARY DEVELOPMENT.

This section consists of 152 single or detached houses of frame, whose parts were cut at the mill and erected on the location. The houses were erected in 1915 at an average cost of $1,500 each. In 1918, 800 temporary 6-room bungalows and 20 houses of a permanent type were erected. Each house stands on a lot 50 by 100 feet, and has six rooms and bath, kitchen sink, electric light, and stove heat, and rents for $6 a month.

In the village are also two groups of multiple houses erected in 1916; the first contains 330 four-room one-story dwellings, in rows of six dwellings each; the second 300 six-room two-story dwellings, also in rows of six dwellings each.

The four-room dwellings cost $925 each and rent for $5.50 a month, and the six-room dwellings cost $1,050 each and rent for $8 a month. Shower baths, toilet connections, and kitchen sink are provided for the four-room houses, and bathtubs, toilet connections, and kitchen sink in the six-room houses. All are lighted by electricity and heated by stoves.

Although this is considered a temporary community and built as such according to plans furnished by the engineering department of the company, the houses are well designed and as well built as many of those intended for permanent use. They have certain minor inconveniences which the permanent houses do not have. The windows, for instance, instead of being double hung, are equipped with the old-fashioned window bolts for raising and keeping them open.

THE BARRACKS.

The barracks built in 1915 and placed within a 10-foot-high barbed-wire fence just outside the powder works, may roughly be divided into three groups: (1) The big bunk house for the foreigners; (2) barracks for the ordinary help; and (3) rooming quarters provided for the skilled help. Within these barracks are housed 6,684 men. The company also provided a hotel and clubhouse, the hotel accommodating 70 men and the club 124.

The barracks are rough, frame, one-story structures covered with tar paper. The hotel and club quarters are frame, clapboarded.

The big bunk houses for the foreign laborers are given free of rent, and a special house is erected nearby where men can do their own cooking. In this house open fires are provided, and each man is given a locker where he can keep his food and dishes. The bunks are placed in tiers of three, which is not considered the best sanitary practice. The bunks have the merit, however, of being of iron frame. On the whole the bunk house is overcrowded. There are massed within 13 bunk houses, 2,228 bunks, an average of 171 bunks to each house. Every bunk house is electric lighted and has a washhouse in connection with it.

A better class of foreigners' bunk houses are four houses divided into 15 rooms each, each room accommodating two men. Otherwise the accommodations are the same as for the 13 larger houses.

In the American camp there are 28 one-story bunk houses of six rooms each, 25 having 24 rooms each, and 7 having 26 rooms each. There are four men assigned to each room; thus there are 3,800 men accommodated in this group of houses. Each man pays 50 cents a week for his quarters. The bunk houses are heated by steam from a central plant and are lighted by electricity. Washhouses with water and toilet connections are adequately provided.





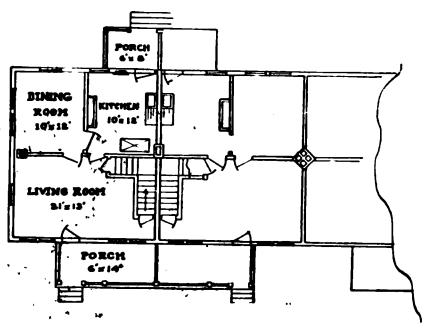


FIG. 100.—COMMUNITY J. FRONT AND REAR VIEW AND PLAN OF TEMPORARY FRAME ROW HOUSES OF 6 ROOMS AND BATH.

Composition exterior, ceiled inside with tongue-and-groove material. Cost per dwelling in 1916, $1,050; rent $8 per month.



Six-room barracks of better type.



Long barracks.

FIG. 101.—COMMUNITY J. BARRACKS FOR SINGLE MEN.

Four men to a room. Heated by central plant. Note arrangements in roofs for ventilation.

Bachelor quarters of a better class are also provided for American help, in which the men live two in a room. There are 15 buildings, having altogether 690 rooms.

HOUSING OF WOMAN WORKERS.

The company has erected lodging halls for housing the woman employees taken on in the spring of 1918. Each dormitory contains 50 rooms, but three rooms are set aside for other purposes—two for the matron, and the third to serve as a trunk room. Two girls can be accommodated in each of most of the rooms, the 47 rooms usually housing, therefore, 94 girls. Altogether the halls accommodate 564, or almost two-thirds of the nine hundred and odd employed at the plant at the time of the investigation.

The lodging halls are temporary structures of frame, ceiled inside with tongue-and-groove material, which is stained a brown. Each hall has a central entrance room with a desk for the matron on duty, and three workrooms or sitting rooms on the second floor. In each of the latter are provided a table and chairs and in one there is also a sewing machine for use of the girls. Attached to each hall is a laundry and several bathrooms for the use of the occupants of the hall. On each of the two floors there is a bath and wash room.

Each bedroom contains one or two beds, according to the number of occupants, a dresser, and a small closet and two chairs. There is one window in each room, but the door has a transom at the top, so as to permit of thorough circulation of air. On account of the brown walls the rooms looked a little dark and small. The dimensions of each room are 11 by 13 feet and the distance from floor to ceiling 9½ feet. As far as possible it is deemed best to permit one occupant to a room. Some of the girls prefer to room together; others prefer to be alone. Three women's dormitories accommodating 95 women each, with rooms large enough for but one person were completed in 1918.

A room is provided in each dormitory for entertainment and recreational purposes.

The cafeteria where the girls take their meals is also in the Y. W. C. A. building. Prices are reasonable and everything looked clean and orderly. Gymnasium and bathing facilities are provided in the building.

Arrangements in the dormitory have been complicated by the fact that the girls work three shifts. Girls coming in between 12 and 1 o'clock at night disturb those who are asleep at that time. No arrangement has yet been made to meet this obviously unsatisfactory situation.

ADMINISTRATION AND COST OF MAINTENANCE.

The policy and management of the company at this plant is essentially the same as at community I and will not therefore be detailed again at this point. The extent of the work of management at this place may be noted, however, from the fact that 580 persons are employed in the so-called quartermaster department, which has charge of the housing, feeding, and welfare of the company's employees.

WELFARE WORK.

A community house has been erected by the company to serve as the center of social life, and a Y. M. C. A. building has been erected and subsidized by the company. The Y. M. C. A. building contains the usual features of such an organization—gymnasium, recreation rooms, and library. Membership rates in the organization range from $2.50 a year to $7.50 for full-privilege membership. The reported membership is nearly 3,000.

The local community house contains an auditorium, also used as a dance hall, seating between 400 and 500 persons; the hall is equipped with a stage and accommodations are provided for serving refreshments. A library is maintained in the building. A charge of 5 cents is made for each person joining the reading club and of 2 cents for each book taken out. The library is open twice a week from 3 to 5 p. m., and once a week from 7 to 9 p. m. About 500 persons avail themselves of the library privileges.

The company furnishes janitor service for this community clubhouse. The welfare worker, who is also the visiting nurse, is in charge of the house.

Two clubhouses, in the nature of boarding clubs, are provided at the permanent community. In the old clubhouse, for the foremen, the rate is $7 a week for room and board, and in the new clubhouse, for the supervising officials and technical men, $8 a week. Reading and writing rooms are provided at each club and everything is made as homelike as possible.

The office men and officials who live outside community J in family quarters and do not care to go home to lunch have arranged for the services of excellent noonday lunches in a building adjoining the administration building. The men manage this themselves, and an assessment is levied to cover the exact cost of maintenance.

At the plant are wash and change houses equipped with lavatories having bath and hot and cold water connections. Liquid soap and paper towels are furnished by the company. "Lockers" are placed in these change houses, but as they are merely built-in receptacles, open and without doors, they are not generally used by the men.

Eight tables at each change house provide places where the men may eat lunches or dinners which they bring.

Through a visiting nurse the families of the plant employees are reached. The visiting nurse acts as a welfare secretary, leader of the local women's clubs, and the Camp Fire Girls, and acts as adviser to the Boy Scouts. She gives lessons in cooking and sewing. Her office is open at all times to those who may want her advice. Accident cases treated at the four emergency hospitals at the different plants of the company are turned over to her for dressing. Extended hospital treatment for company employees is given at the hospital in the city near by.

A Young Women's Christian Association building, containing a cafeteria, has been recently provided near the center of the permanent community, for the pleasure and recreation of the woman employees who were hired as a war-time necessity.

COMMUNITY K.

In 1915 the company which established communities I and J constructed 102 dwellings for employees of its other works in New Jersey. In 1918 an additional 115 dwellings in two-story rows of temporary construction were erected, having 6 rooms per family and 6 families to the row. Five dormitories for men, accommodating 92 men each; and two for women, one housing 100, two in a room, and the other 95 women, each in a separate room, were also provided, as well as three permanent staff houses.

The community, which is about 12 miles from the nearest city, has been completely developed by the company; a water and a sewer system have been put in, streets paved, gutters and sidewalks installed, and the maintenance and protection from fire provided for the community by the company.

The houses are two-story single or detached frame structures, plastered and papered inside, with painted woodwork. All houses have modern sanitary equipment, three-piece bathrooms and kitchen sinks, and are lighted by electricity. Each house has a lot 65 by 100 feet.

CHAPTER XVI.—METHOD OF FINANCING.

HOW THE EMPLOYER CONDUCTS HOUSING.

With few exceptions the housing work was conducted as a general part of the employer's business; the accounting and administrative work connected with it was done in the general office of the employer and by a staff which had other duties to perform. In some instances a special department was created for the conduct of the work, usually termed the land department or land agent. Where the housing was conducted by a subsidiary company the housing enterprise usually became more elaborate and was found more generally in connection with a model-village development. Altogether 15 of 213 companies reporting had organized subsidiary housing companies, and 3 had organized real estate companies controlled by the employer.

It was characteristic of the coal operators to conduct the housing work as a part of the business, each local superintendent being the house and real estate man as well as the manager of the operations. Reports from the superintendents at the mines were transmitted either through the district manager, where there was one, or directly to the comptroller or treasurer of the corporation. The drafting and construction work was a part of the engineer's office.

Eleven companies engaged in iron and steel manufacturing and in allied industries and four companies engaged in certain miscellaneous industries are the only companies reporting the financial method of the subsidiary company. In only three instances was the housing done by a real estate company the stock of which was owned by the stockholders of the employing concern. It is frequently difficult to classify the housing operation as being strictly employer's housing. In one of the three instances referred to the real estate company was financed by bonds held by the employing company. The vice president and secretary of the real estate company were officials of the principal employing company, and the bookkeeping employees of the real estate company were paid jointly by the employer company and by the real estate company. It was also stated that the real estate company did nothing without the approval of the general employing company, although this was denied by an officer of the latter.

In one instance a peculiar relationship had been created as a result of change of control. A former mining company had owned and operated the property and built the usual company houses on it. When this company ceased operating it leased the property, but retained

title and control over the former company houses. At the time of the investigation these houses were rented to the employees of the operating company which collected the rent, while the maintenance and repair of the houses remained the duty of the owner. The employer or lessee in this case, however, was to be held responsible for the housing conditions as he had authority to order repairs and proper maintenance.

It has already been noted how early colonial mills were established at the sources of water power; how, for instance, Paterson, N. J., was organized as a company town by a power and land company created by Alexander Hamilton. The power and land companies in turn leased or sold land and power to the manufacturer. A survival of such an arrangement has been discovered in connection with a cotton mill in South Carolina. The original site of the cotton-mill community in question had been owned by a water power and land company. The cotton-mill operator bought land for his establishment from this company; but the power and land company has agreed to erect houses and to lease them to the cotton-mill owners. The latter in turn sublet to their employees at the same rate at which they lease the houses. The cotton-mill owners, under their license, pay the rent stipulated, whether or not the houses are occupied. The arrangement has not proved satisfactory to the employee tenants, because of the difficulty of securing repairs from the land company as its connection with and interest in the housing is so indirect. The employing company—the principal lessee—furthermore, being in the position of a tenant, is unwilling to expend money to make repairs which will eventually accrue to the benefit of the owners of the houses.

Although the largest proportion of company housing is still done directly by the employer as a general part of his principal business, there is discernible a slight tendency toward the indirect method of the subsidiary company or the real estate company controlled by stock ownership of the employer. The earliest housing enterprise reported as conducted through a subsidiary company dated from 1899; there were three from 1900; one from 1901; one from 1904; five from 1906; two from 1907; one each from 1912 and 1913, and two from 1915.

COLLECTION OF RENT.

In most cases rent is collected every month or every half-month; of 205 companies 89, or 43.4 per cent, report making monthly collection, and 80, or 39 per cent, semimonthly collection. By 36 companies rent is collected every week; of this number 24, or two-thirds, are Southern cotton-mill operators. Where there is a variation in policy and rent is collected both monthly and semimonthly, the longer

period between collections is applicable to the higher staff and office force. Weekly collection is practiced where there is a considerable proportion of colored labor hired.

As regards the manner of collection, 187 companies out of 205, or 91.2 per cent, collect rent by deducting it from wages due, and 18 collect at the office, such collection being usually for higher office men. Of the 18 companies collecting at the office, that is, without deduction from wages due, seven are iron and steel companies and nine are among the miscellaneous industries where a larger proportion of high-class skilled employees is found. A few employers are offering their men a choice as to the manner of collections. There is little difference, in fact, between making the use of the house a part of the employee's remuneration, a perquisite of his employment, as under a pure truck system of payment, and of automatically deducting the rent from the wages due him. It might, in fact, simplify bookkeeping for the company to return to the undisguised truck system by dispensing with the formal process of rent collection on the company books.

A representative of a company in Connecticut recently expressed himself very emphatically in the matter: "We do not take any money out of any employee's envelope. We early settled that phase of the question, that we would treat him like a man and expect him to come to the office and pay his rent when it was due. If he doesn't do it, I get after him."

The facts disclosed by the survey as to the method and manner of rent collections are summarized in the statement following:

TABLE 122.—FREQUENCY AND METHODS OF COLLECTING RENT, BY INDUSTRY AND STATE.

Industry and State.	Frequency of collection.				Manner of collection.		
	Weekly.	Semi-monthly.	Monthly.	Total.	Deduction from pay.	At office.	Total.
Bituminous-coal mining:							
Pennsylvania and West Virginia		[1] 27	5	32	32		32
Ohio, Illinois, and Indiana		2	1	3	3		3
Alabama, Tennessee, and Kentucky		7	17	24	24		24
Colorado and Wyoming			5	5	4	1	5
Total		36	28	64	63	1	64
Anthracite-coal mining		[2] 8	[3] 16	24	[4] 24		24
Iron mining:							
Michigan, Wisconsin, and Minnesota		2	3	[5] 5	5		5
Alabama			3	3	3		3
Total		2	6	8	8		8
Copper mining: Michigan and Tennessee			[2] 5	5	5		5
Other copper and gold mining: Arizona, New Mexico, and Colorado			[6] 5	[6] 5	4	1	[7] 5
Iron and steel and allied industries:							
Northern district	[2] 1	[2] 10	13	[7] 24	17	7	[7] 24
Southern district	[8] 1	1	1	3	[9] 3		3
Total	2	11	14	27	20	7	27
Manufacture of explosives			2	2	2		2
Textile manufacture:							
Northern district	4	1	1	6	6		6
Southern district	[10] 24	20	3	[11] 47	[11] 47		[11] 47
Total	28	21	4	53	53		53
Miscellaneous industries	6	2	9	17	[12] 8	[12] 9	17
Grand total	36	80	89	205	187	18	205

[1] Including 1 company, with 2 establishments, reporting monthly collection at one establishment and semimonthly collection at the other.
[2] Including 1 company reporting part monthly and part semimonthly collection.
[3] Including 3 companies each reporting semimonthly collection at some, but monthly collections at the majority of establishments.
[4] Including 5 companies reporting "partly."
[5] 5 companies did not report on inquiry in question.
[6] 1 company did not report policy.
[7] 1 company did not rent any houses, but only sold lots.
[8] Weekly for Negro employees, monthly for others.
[9] 2 companies collected partly at the office.
[10] Including 1 company which collected monthly from office staff.
[11] 1 company did not report.
[12] 1 company collects partly at office, i. e., in case of superintendents.
[13] Including 1 firm reporting "by billing."

LIMITATION OF RENT TO PERCENTAGE OF WAGES.

Limiting rent to a per cent of the employee's wages was practically unknown among the employer companies covered by this housing study. It was quite evident that the question was new to the companies and had not been raised before. It generally brought the response that the houses were all within the means of the employee or that a general understanding was in effect not to rent beyond the employee's means. Altogether 13 companies of the 205 covered by this feature of the study reported that they limited the amount

that the employee should pay for rent to a certain proportion of his wages, but, except in two cases, no definite percentage was stated. A copper-mining company in Michigan limited the proportion to 10 per cent. This limitation was the conclusion reached by the house-renting agent as a result of his observations and study of conditions in England. A steel company limited rent to 25 per cent of the employee's wages.

On the general point in question it should be said that the company agent having charge of the renting of the houses usually knows the wages in each occupation in the establishment, and therefore can judge the employee's ability to pay any given rental. Furthermore, the question rarely arises, as this investigation shows that company house rents are not excessive and are frequently in effect subsidies to wages, because uneconomic in that they do not yield commercial interest on the capital invested.

FREE RENT.

A very considerable portion of the companies permit their employees to continue living rent free in company houses during sickness or during shutdowns of the plant. Practically all other employers defer the collection of rent in time of sickness, unemployment, or shutdowns. Many also take reduced rent at these times. It is quite common also to find disabled former employees or widows of employees occupying company houses free. Thus 33 houses of one company are occupied by former employees who are either aged or disabled or widows of such employees. The amount of rent charged to the pension account of the company for these 33 houses amounted to $227 per month.

Another company furnished information to the effect that during a 15-year period (1898–1912) about $15,106 had been charged off as charity rent, an average of $1,007 a year.

CHAPTER XVII.—SALE OF COMPANY HOUSES.[1]

Selling of houses is not the customary method by which the employer houses his employees; it is as yet a comparatively untried experiment. Out of 213 different employers canvassed in this inquiry only 33 report constructing and selling houses to their employees. The practice of selling is not limited to any particular industry; it is, however, less common in the mining industry and is finding its limited practice among the more highly specialized and permanent industries. Mine operators do not, as a rule, encourage their employees to buy houses, because the industry is not permanent and mines become worked out after a period of years.

The few companies of those reported which sell houses to their workmen are distributed among the different industries as follows:

Bituminous-coal mining:	
Pennsylvania and West Virginia	2
Alabama, Tennessee, and Kentucky	2
Iron mining: Michigan, Wisconsin, and Minnesota	2
Textiles: New England	[2] 1
Iron and steel manufacturing:	
Pennsylvania and Illinois	13
Southern district	1
Miscellaneous industries	12
Total	33

The term mortgage is the method by which the sale of houses is usually conducted. In one instance the company builds the house for the employee and takes cash payment for it, leaving the employee to secure his money from a local building and loan association. The maximum number of years stated as permitted for the completing of payments is 22, the minimum term 3 years, while the average is approximately 10 years. Fourteen companies report the term as being 10 years and over, and five companies as being below 10 years. Thus, out of a total of 33 employers who sell houses to their employees, 19 have reported the period for which payments run, and in the remaining cases the period has been stated as varying according to agreement entered into or as indefinite in time.

The amount of the first payment is reported either as a certain fixed sum or as a percentage of the sale price. Where the latter is

[1] This chapter appeared also in the Monthly Labor Review of the Bureau of Labor Statistics for April, 1919 (pp. 227-232).

[2] Since this has been written report has been received of the adoption by two other cotton mills in the New England district of the plan of selling houses to employees. Plan No. 4 (described below) is the plan adopted by one of these companies.

reported, it appears to vary around 10 per cent. The highest proportion (reported in one instance) is 50 per cent, and the lowest (reported in two instances) is 1 per cent. Where reported in absolute amounts, the maximum reported is $400 (one instance), the minimum $10 (one instance), and the average $130, so that on a house costing $2,500 the average first payment will be about 5 per cent.

The rate of interest on the balance of the payments is fixed at 6 per cent by 21 companies or loan associations through which the companies operate out of 30 reporting on this point, at 5 per cent in 7 instances, and at 7 per cent in 1. In one case no interest is charged by the company.

Payments are almost invariably collected monthly, only one employer reporting weekly collections and one semimonthly, while one reported "at convenience of purchasers." In 10 cases the installments are collected by deducting them from the wages due, and in all other instances they are payable at the office of the building and loan association or of the subsidiary real-estate company conducting the housing. In some instances it is stated that the purchasers prefer to have collections made on the pay roll, as it is the least trouble to them, as well as certain. The companies usually let the purchaser choose his method of payment.

MANAGEMENT OF FUNDS.

The whole management of the building and selling scheme is without exception in the hands of the employing company or the subsidiary real estate company, as the case may be. Of the 33 companies which report the practice of selling houses to their employees five operate through a subsidiary or stock-controlled company. The attention of the Bureau was called to one projected scheme under which the company proposed to organize a joint trusteeship composed of representatives of the company and of the employees who are purchasing the houses. By this means the company hopes to prove the bona fide nature of the scheme and thereby to satisfy the employees of the nonprofit-making character of the undertaking and of its being wholly in the interest of the employee.

ABILITY TO PAY.

In practically all cases the sales are regulated in some way according to the ability of the employee to purchase, while in others judgment as to that fact is left to the employee. In two instances a definite relation has been established between the monthly wages and the monthly payments on the house—in one case installments must not exceed one-fifth of the wages, in another one-third. It was pointed out that a failure to adjust payments to income would defeat the

purpose of the whole scheme of getting permanent and efficient employees, as it would overburden the employee, cause him worry, and hence make him less efficient. In one case the company assumes that the employee has additional sources of income when he tries to buy what seems a somewhat expensive house. In most cases the question of whether the employee has boarders, who bring additional income, and his standing and credit among his fellow employees are looked up. The amount of his earnings is always open to inspection as a gauge of his ability to buy a house.

INSURANCE TO GUARANTEE PAYMENT OF LOAN.

One employer has been found who encourages the purchaser of a house to take out a life insurance policy to guarantee the payment of his loan in the event of death prior to the final payment. Such a plan is of advantage to the family of the purchaser should he die before making all payments, and it is obviously also of advantage to the selling company although it also holds the mortgages on the property for its own protection.

The arrangement provides for a lump-sum payment of the premium by the employer to the insurance company. The employee purchaser can then liquidate this premium by periodic inclusion in his semimonthly payments of principal and interest of the purchase price. The amount of such a premium is not great. Thus, for the 15-year term, which is allowed for the payment of the purchase price of a house, the amount of the premium for each $1,000 of insurance for a purchaser 21 years of age at the time of the purchase would amount to $57.94, if paid in a lump sum in advance; and if paid semimonthly in installments, each installment would amount to 30 cents. At age 35 the lump-sum payment in advance on $1,000 of insurance would be $69.07, or 36 cents in semimonthly installments. For $3,000 of insurance the above amounts would be trebled—e. g., at age 35 the semimonthly installments would be $1.08.

The result of the recommendations of the particular company whose scheme of protection is described above is shown by the fact that a trifle over half (51 per cent) of the purchasers took out policies, and of those doing so 95 per cent took out policies covering the full value of the house, and 5 per cent took out policies covering part value. Of the men who bought houses from the company, 82 per cent are factory workmen, 12 per cent work in the factory office, and 6 per cent work in the general office of the company.

Another employer while not demanding insurance to guarantee future payments, requires what is in effect a term insurance policy, the risk of which is assumed by the company. The employee signs an agreement to purchase, in a cooperative bank approved by the employer, shares of stock and to continue payment thereon until the

deposits amount to $1,000. This sum matures in about 12 years under this plan and becomes the security for the payment of a 12-year note of that face value on the property. If at any time before the 12 years expire the employee becomes disabled or dies the real estate company through which the employer conducts his housing agrees to accept the surrender value of the shares in the cooperative bank in full payment of the 12-year note. The employee must make his monthly payments on the cooperative stock and continue his monthly payments of interest; in consideration therefor the real estate company agrees not to make a call on the demand note which is given for the remainder of the purchase price.

Though not technically an insurance policy, the whole arrangement is, as has been said, in the nature of a term insurance scheme, the real estate company and not an outside insurance company assuming the risk of death or disability of the purchaser within the 12-year term of the note.

Table 128 shows, for various ages, the amount of single premium paid in advance by the company, and the semimonthly payment made by the purchaser, per $1,000 of insurance.

TABLE 123.—AMOUNT OF SINGLE PREMIUM IN ADVANCE AT VARIOUS AGES AND AMOUNT OF SEMIMONTHLY PAYMENTS REQUIRED TO PAY SUCH PREMIUM, WITH INTEREST.

Age.	Single premium per $1,000 paid by company.	Semi-monthly payment per $1,000 made by purchaser.	Age.	Single premium per $1,000 paid by company.	Semi-monthly payment per $1,000 made by purchaser.
21 years	$57.94	$0.30	39 years	$76.16	$0.40
22 years	58.39	.30	40 years	78.48	.41
23 years	58.87	.30	41 years	81.08	.42
24 years	59.37	.30	42 years	83.98	.44
25 years	59.93	.31	43 years	87.26	.46
26 years	60.54	.31	44 years	90.95	.48
27 years	61.18	.31	45 years	95.08	.50
28 years	61.88	.32	46 years	99.73	.53
29 years	62.65	.32	47 years	104.90	.56
30 years	63.49	.33	48 years	110.68	.59
31 years	64.40	.33	49 years	117.09	.62
32 years	65.41	.34	50 years	124.15	.67
33 years	66.52	.34	51 years	131.93	.71
34 years	67.72	.35	52 years	140.45	.76
35 years	69.07	.36	53 years	149.76	.82
36 years	70.56	.36	54 years	159.93	.88
37 years	72.23	.37	55 years	170.98	.95
38 years	74.19	.38			

PROVISIONS TO PREVENT SPECULATION.

In selling their houses three companies have tried to prevent speculation. One large manufacturer in Ohio aims to have the speculative increase accrue to the employee. This is done by basing the monthly installments of the purchase price for the first five years on the present real estate value of the property, which is placed at 25 per cent above the actual cost price to the company; and if at the end of

the five years the employee is still with the company there is returned to him the difference between the two values and the interest thereon. All payments thereafter are then made on the actual cost price of the property.

Another method of preventing speculation is to require the erection within a limited time, usually less than a year, of a house upon the lot sold to an employee. A certain steel company in Pennsylvania, which encourages the housing of its employees by selling them land, refunds 20 per cent of the purchase price of a lot if a house is built within six months or a good start made on it. A New England textile mill, not covered in the original investigation, reports to the Bureau that it gives the employee the lot if at the end of 10 years he has erected a house on the lot and is still with the company.

Some employers, however, have in fact encouraged the element of speculation in offering their houses to the workmen. Possibilities of the future growth of the company town are pointed out, "whether you buy to hold out for an increase or to build a home to live in or to rent." The buyer is lured by "$3 cash and $2 per week until paid, no interest, no taxes for three years." [3]

OPTION TO REPURCHASE.

In some deeds provisions are found for the repurchase of property being sold to an employee, should he for any reason desire to discontinue his purchase agreement. In such cases of repurchase by the company it is customary to return to the employee an amount equivalent to the difference between the sums paid on installments and the amount of a reasonable rent of the premises for the period for which the house has been occupied, crediting the difference on future rent should the occupant care to remain.

One manufacturing company in Pennsylvania figures the rent on the house as 10 per cent of its purchase price. This amount, plus all taxes, insurance, unpaid interest, and repairs, is deducted from the total amount of the payments made and the balance returned in cash.

The following, from the purchase agreement of a structural steel company in Pennsylvania, may be taken as typical:

> It is further agreed that if the purchaser, before the delivery of the deed, shall be discharged from, or shall voluntarily leave, the employ of the —— company, a corporation created and existing under the laws of the State of New Jersey, the land company agrees to purchase said property upon the following terms, if requested in writing by him so to do before the expiration of 60 days after the termination of his service with said —— company:
>
> (*a*) If the purchaser shall be discharged from the employ of said —— company, the land company shall pay to the purchaser when he shall have surrendered all his right,

[3] See, also, "Housing and the land problem," in Monthly Review of the Bureau of Labor Statistics, June, 1918, pp. 268-277.

title, interest, and estate in and to said property to the land company, an amount equal to said purchase price, less a discount at the rate of 1 per centum of said purchase price for each year or fraction thereof that this agreement shall have continued in force (but the rate of said discount shall never be less than 3 per centum nor more than 10 per centum of the said purchase price), and less also all sums still owing by the purchaser to the land company under this agreement.

(*b*) If the purchaser shall voluntarily leave the employ of said —— company, the land company shall pay to the purchaser when he shall have surrendered all his right, title, interest, and estate in and to said property to the land company, a sum equal to said purchase price, less a discount of 2 per centum of said purchase price for each year or fraction thereof that this agreement shall have continued in force (but the rate of said discount shall never be less than 6 per centum nor more than 20 per centum of the said purchase price), and less also all sums still owing by the purchaser to the land company under this agreement.

It is further agreed that if the purchaser shall die while in the employ of said —— company, the land company agrees to purchase said property from the heirs, executors, or administrator, of the purchaser if requested by them in writing so to do before the expiration of 60 days from the date of said purchaser's death, for a sum equal to the aforesaid purchase price, less such amount as may be necessary to restore said property to good condition and repair, and less also all sums still owing to the land company by the purchaser under this agreement at the time of his death; provided, however, that not more than 10 years shall have elapsed from the date of this agreement, in case the purchaser shall have received a deed to said property at the time of his decease.

SALE TO NONEMPLOYEES.

While a few employers (14 altogether) sell houses to nonemployees in their locality, the terms of sale are generally not so favorable as to employees; either a discount is made for employees or cash is required on sales to nonemployees, and not to employees.

When there is sale to nonemployees, it is frequently dictated by necessity; the company may own the whole community, but at the same time need to provide for tradesmen and artisans in the locality other than its own employees. These usually form the class of outsiders to whom sales are made.

CONCLUSION.

None of the plans of selling houses to employees as outlined above prevents ultimate speculation or realization of an unearned increment in the property. Some of them appeal to the speculative instinct of the purchaser. Obviously no plan which permits out-and-out sale and parting with title in fee simple will prevent speculation. The very most that the plans do may be to prevent speculation for the period covered by the terms of the installments where there is a repurchase agreement; if there is no such agreement, speculation is not prevented even temporarily. Plans of sale, however, clearly increase the number of those who will enjoy any accruing unearned increments and distribute that form of wealth more widely.

From the employer's point of view the gain in selling houses to his employees comes from securing a certain amount of permanent

labor and thereby reducing labor turnover. In fact, some employers calculate roughly that they can afford to sell a house to a workman below cost in an amount equal to the per capita cost of labor turnover. Looked at from that point of view, it may well be worth while to the employer to give to the workman who has purchased a house a lot worth, say $300 or even $500, if the workman has remained in the employ of the company for 10 years, as noted in plan of purchase submitted by a certain New England textile concern. On the basis of turnover studies which had been made for a certain company, it was proposed to return to the workman who had purchased a house $700 of the price thereof provided he were still in the employ of the company at the end of the 15-year period, which was the period of the second mortgage provided in the plan. The employer sees in the plan of sale the possibility of securing a stable work force. In no case, however, as suggested, can he expect a permanent labor force such as might be maintained under renting conditions which might be made more attractive than purchase.

From the employee's point of view, the buying of a home is the giving of hostages to the future and thereby reducing the mobility of his capital—his earning capacity. Whether or not this will seriously impair his bargaining capacity is a moot question, as the factors determining bargaining power are numerous and manifold. At the same time the buying of a home satisfies certain acquisitive instincts of the employee and yields him a return in a feeling of independence within his own group or class. Tradition and habit also play a large part in all these matters.

PLANS OF PAYMENT.

PLAN NO. 1.

The subsidiary land company will sell to its own employees or to those of the principal company a house already built, or it will build on plans furnished by the applicant. In the purchase price is included the cost of the house and lot, grading, fencing, and sewer and water connections.

The first payment is fixed at 10 per cent of the total purchase price. Within 43 months (three years and seven months) the purchaser is required to pay off 35 per cent of the purchase price by equal monthly installments of principal and interest. After paying 35 per cent of the purchase price in this manner and 10 per cent in the initial cash payment, he is given a warranty deed, subject to a mortgage, for the remaining 55 per cent of the purchase price. This mortgage must be paid at the end of a further five-year term, with interest semiannually at 4 per cent. During the time of the mortgage, payments in multiples of $50 will be accepted on the mortgage and the interest charges on the remainder reduced accordingly. If

the purchaser defaults on his payments, he is charged at a rate of 10 per cent of the purchase price per year for the time he has occupied the house, the difference between this and the amount paid being refunded to him. If he dies during the continuance of the agreement the land company will take back the property and after deducting the cost of necessary repairs, unpaid taxes, and interest, return to the purchaser's heirs all money paid on the purchase of the house plus 5 per cent interest; or the heirs may continue the agreement with the company.

Seventy-four employees of the company out of a total of about 3,000 on the rolls in October, 1916, have purchasing contracts of the kind described with the land company.

The details of the plan are as follows:

Kind of house.—Under the terms of this agreement the land company will sell to an employee a house already built, or it will build and sell him a new house constructed on his own plans, subject, however, to the approval and inspection of the land company.

First payment.—The method of payment can perhaps be best explained by a specific example. We will therefore suppose that John Jones wishes to buy the four-room cottage on the south side of Lehigh Avenue, between Fifth and Sixth Streets, known as No. 139, which costs one thousand dollars ($1,000), including grading, fencing, sewer and water connections. Jones will pay down ten per cent (10%) of the purchase price, one hundred dollars ($100), upon signing the agreement.

Monthly payments.—For three years and seven months thereafter, a total of forty-three (43) months, he will pay the sum of ten dollars and seventy-seven cents ($10.77) to the land company each month. This monthly payment is made up as follows:

Payment on purchase of house		$5.00
Other charges:		
Interest to land company on cost of house, $1,000 at 5 per cent per year	$4.17	
Water rent	.59	
Sewer rent	.21	
Fire insurance and taxes, about	.80	
		5.77
Monthly payment		10.77

Interest.—The land company will allow and credit to Jones on account of purchase price, interest at the rate of five (5) per cent per year, on all sums paid on the purchase price of the dwelling.

At the end of the three years and seven months Jones will have paid three hundred and fifty dollars ($350) toward the purchase of the house, made up as follows:

Payment on signing agreement	$100.00
Forty-three monthly payments, at $5	215.00
Interest credited by land company on above payments at 5 per cent per year	35.00
	350.00

Default in monthly payments.—Should John Jones fail to make payments as provided for in the agreement, rent would be figured on his house at the rate of ten per cent (10%) per year, or eight dollars and thirty-three cents ($8.33) per month for the entire time he occupied the house. This amount plus all taxes, insurance, unpaid interest, and repairs will be deducted from the total amount of payments made and the balance will be returned in cash.

Mortgage.—The payment of the above three hundred and fifty dollars ($350), which is thirty-five per cent (35%) of the purchase price, entitles Jones to a warranty deed, subject to a mortgage for the balance of six hundred and fifty dollars ($650) still to be paid.

The mortgage runs for five years, interest being at the rate of four per cent (4%) per year, payable semiannually on the first days of January and July. Fifty dollars or more will be received at any time toward the payment of the mortgage, and the interest charge will be proportionately reduced from the beginning of the following 1st of January or July, as the case may be.

Employees are urged to complete the payments on their properties during the five (5) years which the mortgages cover. If the interest should not be paid on a mortgage, or the principal when due, the law provides that the property may be sold by the sheriff. Any amounts realized on such sale above the principal still due, plus the interest and costs, will be returned to Jones.

Death benefit.—If Jones should die during the continuance of the agreement and before the mortgage is fully paid, the land company will take back the property, after deducting the cost of necessary repairs, unpaid taxes, and interest, and return to Mr. Jones's heirs all money paid on the purchase of the house, plus five per cent (5%) interest, or the heirs may continue the agreement in the same manner as though Mr. Jones were still living.

Conclusion.—Purchasing agreements made for larger or smaller amounts carry proportionately higher or lower monthly payments. Men desiring to take advantage of the opportunity offered to buy their own homes under the terms of a purchasing agreement are urged to apply to the land company for any further information. The land company is glad to work out the payments involved for any agreement in a manner similar to the illustration used above.

PLAN NO. 2.

Plan No. 2, like plan No. 1 already described, makes use indirectly of the system of equal monthly installments in the payment of a part of the purchase price and of the ordinary mortgage system for the other part, usually the greater part.

There is required from the purchaser an initial payment of 10 per cent of the purchase price, whereupon a conveyance of the property is made. For the balance of the purchase price the purchaser gives two notes, one for $1,000, payable in 12 years at 5 per cent, and another for the remainder of the purchase price payable on demand with interest at 5 per cent, both notes being secured by a purchase-money mortgage to the subsidiary real-estate company.

The purchaser gives also a supplementary agreement to the effect that he will purchase in a cooperative bank approved by the subsidiary real-estate company, five shares, and will continue payments thereon until his deposits shall have amounted to the sum of $1,000, which in the local banks, at the prevailing rate of interest, takes place in about 11 years and 10 months. This insures the payment of the 12-year note according to its terms.

In consideration of this agreement the real-estate company agrees not to make call upon the demand note so long as the purchaser continues to make monthly payments to the cooperative bank in accordance with his agreement. It is further agreed that if the purchaser dies or becomes incapacitated within 12 years, provided that at that time he is not over 60 years of age, the real-estate company will accept the surrender value of his cooperative bank shares in full payment of the time note. The result of this agreement is the assurance to the purchaser that at the end of 12 years or upon his death prior thereto, a sufficient proportion of the purchase price will have been paid so that he or his estate will then own the property free of all encumbrance except a first mortgage for not over 60 per cent of the value of the property, and so that at his option or that of the company he may go to a bank for a mortgage and be entirely independent of the company.

In the case of a few of the higher-priced houses the carrying out of this arrangement does not reduce the purchase price to a point where a bank mortgage could be secured to take care of the balance, but such houses are sold to men of higher earning power who may be expected to make payments on the purchase price in excess of their obligations, which will enable them to be independent of the company at the end of 12 years. Even in these cases, if the company so desires it may at that time make demand on the demand note and thus force them to reduce their indebtedness to an amount which can be met by the proceeds of a first bank mortgage.

Sales have been made so recently that no extending accounts that will be interesting as an illustration are available. The form given to a certain employee at the time he purchased a house, which is illustrative of the actual operation of the plan, is as follows:

Total purchase price	$3,851.50
First payment, 10 per cent	385.15
Balance borrowed on mortgage	3,466.35
Interest at 5 per cent	173.32
Monthly interest during first 12 years	14.45
Amount due in 12 years, secured by time note	1,000.00
Balance secured by demand note	2,466.35
Interest at 5 per cent	123.32
Monthly interest payment after 12 years	10.30
Monthly payment to cooperative bank	5.00
Total monthly payments during first 12 years	19.45

The purchase price represents the actual cost of the house and land, without profit to the company. The original purchase price of the entire area was divided by the number of feet in the tract to determine the base price per foot. To this was added a pro rata proportion of the cost of improvements such as sewers, highways, and sidewalks, of the engineering expense, and of the architect's fees.

In the case illustrated above the cost of the land was $685 for a lot containing 6,850 square feet. To this figure was added the actual price of the house, without profit. This price included the expense of construction, heating, lighting, plumbing, piping, hardware, fixtures, papering, window shades, screens, concrete cellar floor, granolithic walks, rough grading, finish grading, planting, and clothes reel.

PLAN NO. 3.

This is a plan on the principal of the building and loan association system except that the purchaser is not required to make any initial payment greater than his monthly installments. If he owns a lot the company builds his house on it, but if he does not, it requires him to have $100 paid on it before building the house. The company then assumes the mortgage for the balance of the price of the lot.

The company's description of the plan is substantially as follows:

Two mortgages may be placed upon a property. The first mortgage is for about one-half the value of the property, and is carried by the —— insurance company, with whom arrangements are made so that the purchaser makes the payments due direct to the —— company, and covers the balance of the purchase price. It is not necessary to make any payment down when property is purchased. The semi-monthly payments will pay off the second mortgage in 12 years and pay off the first mortgage in three years more, the rate of interest being 6 per cent per annum. These periods are the maximum time allowed in which to pay for the property, but provision is made to allow extra payments to be made. The purchaser can also make a payment down if he likes, as well as pay up the balance of any payments due, at any

time. Of course all paid over and above the specified semimonthly payments will help reduce the interest charges and the time required to clear the property. An amount will be collected semimonthly which will provide for the taxes when due.[4]

The —— company wants the purchaser to obtain his home at the actual cost price to the company, but, to prevent speculation, the semimonthly payments for the first five years have been figured on the real-estate value of the property, rather than on the cost value. The real-estate value is 25 per cent higher than the cost value, and at the end of the fifth year, if the purchaser is still in the employ of the company, and still retains the property, and has made the semimonthly payments as agreed, the difference between the two values and the interest thereon is canceled and credited to the purchaser. All payments after that are made on the basis of the cost price of the property.

The following statement shows how the first and second mortgages on a property costing $2,288 and having a real estate value of $2,860 may be paid off:

Reduction of first and second mortgages on a property costing $2,288 (real estate value, $2,860.)

	Principal reduced by—	Balance due.
First mortgage, $1,430:		
At end of 1st year (payment $6.03 semimonthly)	$60. 80	$1, 369. 20
2d year (payment $6.03 semimonthly)	64. 44	1, 304. 76
3d year (payment $6.03 semimonthly)	68. 42	1, 236. 34
4th year (payment $6.03 semimonthly)	72. 66	1, 163. 68
5th year (payment $6.03 semimonthly)	77. 14	1, 086. 54
Less one-half of $572	286. 00	800. 54
6th year (payment $4.44 semimonthly)	60. 31	740. 23
7th year (payment $4.44 semimonthly)	64. 07	676. 16
8th year (payment $4.44 semimonthly)	68. 03	608. 13
9th year (payment $4.44 semimonthly)	72. 26	535. 87
10th year (payment $4.44 semimonthly)	76. 63	459. 24
11th year (payment $4.44 semimonthly)	81. 35	377. 89
12th year (payment $4.44 semimonthly)	86. 40	291. 49
13th year (payment $4.44 semimonthly)	91. 73	199. 76
14th year (payment $4.44 semimonthly)	97. 34	102. 42
15th year (payment $4.44 semimonthly)	102. 42	
Second mortgage, $1,430:		
At end of 1st year (payment $6.98 semimonthly)	84. 12	1, 345. 88
2d year (payment $6.98 semimonthly)	89. 31	1, 256. 57
3d year (payment $6.98 semimonthly)	94. 86	1, 161. 71
4th year (payment $6.98 semimonthly)	100. 70	1, 061. 01
5th year (payment $6.98 semimonthly)	106. 89	954. 12
Less one-half of $572 286. 00		
Interest 119. 69		
	405. 69	548. 43
6th year (payment $4.01 semimonthly)	65. 24	483. 19
7th year (payment $4.01 semimonthly)	69. 30	413. 89
8th year (payment $4.01 semimonthly)	73. 58	340. 31
9th year (payment $4.01 semimonthly)	78. 11	262. 20
10th year (payment $4.01 semimonthly)	82. 94	179. 26
11th year (payment $4.01 semimonthly)	88. 06	91. 20
12th year (payment $4.01 semimonthly)	91. 20	

[4] It has worked out, however, that the purchasers usually pay their own taxes.

The table below shows what amount must be paid semimonthly in order to pay for properties of certain stated values in a term of 15 years.

TABLE 124.—PAYMENTS REQUIRED ON PROPERTIES OF GIVEN VALUE.

Cost of property.	Real estate value of property.	Semimonthly payment.		
		First five years.	Next seven years.	Last three years.
$1,984.00	$2,840.00	$11.27	$7.31	$3.86
2,682.00	3,352.00	15.25	9.86	5.19
2,288.00	2,860.00	13.01	8.45	4.44
2,699.00	3,373.75	15.34	9.88	5.22
2,801.00	3,501.25	15.92	10.24	5.43
2,808.00	3,510.00	15.97	10.26	5.43
2,845.00	3,556.25	16.16	10.47	5.53
2,896.00	3,620.00	16.54	10.67	5.22
2,998.00	3,747.50	17.06	11.03	5.75

As to insurance the company states:

Fire loss and the contingency of death have been thoroughly considered, and the company has decided to carry the fire and tornado insurance on all homes at its own expense, for its own protection. To protect the home owner and his family while the payments are being made the owner has the option to take diminishing life insurance with the —— company, which in the event of death will pay one or both of the mortgages, depending upon the amount of insurance taken.

* * * * * * *

If 100 applicants can be massed and passed upon at one time, there will be no additional expense in connection with medical examinations, etc.

The owner, by adding a little to his payments each time * * * can, in case of death, secure the payment of all or a part of the indebtedness on his home. This arrangement is entirely optional with the purchaser, but just as the company has provided protection against fire loss, so it believes each owner should protect himself and his family against the contingency of death.

The amount of single premium, at the various ages, which the company will advance and add to the second-mortgage note, and the amount of the semimonthly payments required by the owner to repay the single premium advanced, with interest, has already been presented in Table 128.

Following is a sample of the application card which must be presented by the employee who desires to purchase a house from this company:

CARD OF APPLICATION TO BUY PROPERTY IN —— ALLOTMENT.

Date
Application of.....Dept. No. Ck. No.
Age..... Married or single..... Number dependent on me for support.....
Length of service.....Average wages per month $.....
Are you now renting..... Boarding..... Living in your own property.....

Approved ☐
Disapproved ☐ Foreman or superior officer.

Approved ☐
Disapproved ☐ Asst. Supt.

Approved ☐
Disapproved ☐ Supt.

If disapproved, please state reason.....

The land contract of this company is reproduced below:

LAND CONTRACT.

This agreement, made at, Ohio, this day of in the year of our Lord one thousand nine hundred and by and between of the city of, county of, and State of Ohio, party of the first part, and of Ohio, party of the second part:

Witnesseth, that the said first party hath this day agreed to sell unto the second party, his heirs, executors, administrators, and assigns, the following described premises:

Situated in the township of, county of, and State of Ohio, and known as lot No. .. of the allotment, as recorded in Plat Book 16, pages 23, 24, 25, 26, and 27 County Records of Plats, together with all hereditaments and appurtenances thereunto belonging but subject to all legal highways.

And the said second party does hereby agree to pay to the said first party, his heirs, executors, administrators, or assigns for the land aforesaid the sum of ($....), being the value of said premises, payable as follows: dollars ($....) on the first day and dollars ($....) on the fifteenth day of each and every month from and after the date of this agreement until the entire consideration aforesaid is paid, together with interest thereon at the rate of 6 per cent per annum, payable annually from the date hereof, interest if not paid when due to bear interest at the same rate as the principal, and the said second party also agrees to pay all taxes and assessments of every description whatsoever that may be due and payable upon said property from and after these presents.

It is expressly agreed by and between said parties that if any one of said installments or the interests accruing thereon shall not be paid within thirty (30) days after falling due then all of said installments remaining unpaid shall at once become due and payable at the election of first party.

It is furthermore understood and agreed that the said first party who holds the title to the aforesaid premises, may mortgage said premises to the Metropolitan Life

Insurance Co. of New York or such other person or corporation with whom he may be able to negotiate a loan, and that upon the making of such loan the said first party hereby agrees to receive from the Realty Co. a deed of the aforesaid premises with restrictions as hereinafter set forth and agrees to assume said first mortgage as a part of the consideration of said premises and to execute and deliver to the Realty Co. a second mortgage securing a note for the balance of the purchase price unpaid upon the same general plan as is now being carried out by the said Realty Co. in the sale of its allotment, it being understood that the said first party in the carrying out of the general plan shall convey the aforesaid premises to the Realty Co.

In case default shall be made by the second party, his heirs, executors, administrators, or assigns, in any of the conditions above stipulated to be performed by him, it shall and will be lawful for the first party, if he so elects to treat this contract as thenceforth void, and to reenter upon said premises at any time after such default, without serving on the second party, or any person holding under him, a notice to quit said land; and in case this contract shall be so treated as thenceforth void, the second party, or those claiming under him, shall thenceforth be deemed mere tenants at will under the first party and be liable to be proceeded against without notice to quit under the provisions of the law regulating proceedings in cases of entry and detainer; and the first party in such case shall be at liberty to sell the land and premises to any person whatsoever, without being liable in law or in equity to the second party or any person claiming under him for any damages in consequence of such sale, and shall be entitled to hold out of the payments made hereon by the second party, the sum of $.... per month, for and during the time the said second party may have had possession of said premises under and by virtue of this contract, as payment for the use of the same, and also an amount sufficient to cover all damages sustained by the first party by reason of the nonperformance of this contract by the second party, and shall not be required to return any of said payments until all such claims are adjusted and settled in full. And if said payments are not sufficient to cover all claims and demands which the first party may be legally entitled to make by reason of the forfeiture or nonperformance of this contract, the said first party may sue for, and in an action at law, recover from the second party any balance of such claims that may remain due and unpaid.

It is further expressly understood and agreed that whenever said second party shall be entitled to a deed of said premises, that the deed of conveyance shall contain the restrictions as now contained in the printed deed of said Realty Co. and used in conveying other of said lots to other purchasers, to the end that all of said deeds may be uniform and all purchasers may be bound by like restrictions and conditions.

Now, if the said second party, his heirs, executors, administrators or assigns, shall well and truly pay the said purchase money, interest, taxes and assessments, named in this agreement, as the same become due, the first party or his heirs, will well and truly make, execute and deliver unto the said second party, or his legal representatives, a good and sufficient deed of the premises aforesaid. But on failure of the second party to pay the purchase money, or any part thereof, or the interest, taxes or assessments as above mentioned then this agreement shall be void, as it regards the first party at his option.

In witness whereof we hereunto set our hands this day of in the year of our Lord one thousand nine hundred and

Signed and acknowledged in presence of—

.....

.....

Below is given the purchaser's agreement:

AGREEMENT FOR PURCHASE BY LAND CONTRACT.

Date.....

This agreement, made by and between —— —— of ——, Ohio, first party, and —— —— of ——, second party, witnesseth:

Whereas first party has this day by land contract sold to second party, lot No. — of the —— —— allotment, and

Whereas such contract provides for semimonthly payments upon the same and the second party is in the employ of the —— Co., and the —— Co. is the owner of the —— —— Realty Co., which company is directly interested in said allotment, and

Whereas it is desired to provide a means by which the payments may be made agreeable to all the parties.

Now, therefore, it is agreed that the said the —— Co. shall be permitted to retain from the semimonthly payments due to second party as one of its employees an amount sufficient to make the semimonthly payments due said first party under said land contract hereinbefore referred to, and the said the —— Co. may retain such payments and substitute therefor a receipt specifying the amount retained and how the same is to be applied, or it may credit the same in a pass book provided for that purpose, and this agreement shall be construed to be an order upon the —— Co. to pay to —— —— or the —— —— Realty Co., as the case may be, the sum or sums of money so retained from the semimonthly payments due said second party, and when retained shall be applied to the payment of the payments due under said land contract, including also any taxes and assessments.

It is furthermore understood and agreed that at any time within one year upon the written request of said second party said the —— —— Realty Co. will erect or cause to be erected upon said lot a residence, the cost of which shall be in an amount agreeable to all parties, but subject to the restriction thereon and to be built of such material and such design as may be agreeable to the —— —— Realty Co., and when so constructed the premises shall be conveyed to said second party and second party shall be permitted to pay for the same by assuming the first mortgage if any thereon and executing and delivering a second mortgage to the —— —— Realty Co. under the said general plan as is now being carried out in the sale of lots and houses to the employees of said the —— Co., to which general plan reference is hereby made; the consideration for the entire premises to be the cost thereof plus 25 per cent with a provision for a discount provided the purchaser remains in the employ of the —— Co. for five years, all in accordance with the general plan as to payments and otherwise heretofore referred to.

It is furthermore understood, however, that the purchaser may finance and erect his own residence, providing that the same shall be built in accordance with the restrictions contained in the deed and the architecture and material entering into the construction is approved by the architect of the —— —— Realty Co.

In witness whereof the parties hereto have hereunto affixed their signatures on the day and year above written in duplicate.

.....

.....

Samples of other forms used by this company are given below:

MEMO OF STATEMENTS MADE AT TIME OF PURCHASING LOT NO. —.

(A) Cost price of lot $——.
Real estate value $——.

(B) One hundred dollars ($100) to be paid on purchase price of lot before company will begin construction of house.

(C) Lot is bought as it lies. All grading by owner.

(D) Cost of lighting fixtures, private walks around house, grading yard and top-soiling may be added to cost if so desired.

(E) Lot payments and interest are payable as above until such time as house is entirely completed ready for occupancy, when lot payments cease and payments are made on whole property, which payments also include interest.

LOT APPLICATION.

Name.....Date.....
Age.....Card No. Dept.....
Dependents (give age and sex of children).....
Average wage per month { Applicant. / Pay roll.
Employment record.....Physical examination.....
Total service.....Lot No. Price.....
Statement of assets and liabilities.....
Approved:

.....
Pres. —— —— *Realty Co.*

HOUSE APPLICATION.

Date.....

House plan No.	Building bid.....	Monthly pay't est.
Architectural approval:	Extras est.	Wages per mo.
.....	Due on lot.....	Additional.....
.....	To tal cost	Income
.....	R. E. value	

Additional employment record.....
Statement of assets and liabilities.....
Approved:

.....
Pres. —— —— *Realty Co.*

CHARACTER INVESTIGATION.

Name Card No.
City address
Length of time at present address
Other addresses in city
Length of time married
Location prior to coming to ——
Names and addresses of references in this or other cities (responsible business or professional people, not relatives)
Special notes

Date

The —— Realty Co., ——, Ohio.

GENTLEMEN: I hereby make application to have no property payment taken out of my wages on —— for the reason as stated herewith.

Sickness or accident (give particulars)
Short work (give figures)
Name

APPLICATION FOR APPROVAL OF OUTBUILDING OR ALTERATION.

Name
Address
Location (if outbuilding)
Nature of alteration
Material
Design
Size
Color
What will it be used for?

PLAN NO. 4.

Following is the company's statement of its plan:

The employment department assists families not only in seeking a home, but in building their own houses. Although the company has about 600 well-kept houses, which operatives may rent at from $4 to $7 per month, no employees need live in any of these. The company has made an offer to its helpers of five years' standing, who desire to build houses for themselves, a lot of land 50 by 100 feet near —— Park, a park of almost 5,000 acres presented to the city of —— by the company. The land is high and healthful, overlooking the —— River and the company's plant. A deed, with ordinary restrictions, is given to the employee, limiting the house to be built to a two-family house in order that only suitable dwellings may be erected. The company accepts first and second mortgages, each for one-half the purchase price of the land, and, should the employee erect a house in accordance with the restrictions, he may secure the plans for a suitable home from the company without expense; these mortgages will be allowed to remain without interest so long as the mortgagor remains in the employ of the company and continues to occupy the house. At the end of five years, provided the operative is still with the company and occupying the house, the second mortgage will be surrendered for a consideration of $1. At the end of 10 years, should the operative continue with the company and in the occupancy of the house, the first mortgage will be surrendered for the further consideration of $1. In case of death the heirs of the holder succeed to his rights under the agreement. The company arranges to give any savings bank in the city a first lien on the entire property should the operative desire money to pay for the erection of a suitable house on the land.

HOUSES SOLD UNDER PLAN NO. 2.

The housing organization selling houses according to plan No. 2 differs little from the ordinary real estate development, except that the company conducting it is a subsidiary of the principal employing company, the officers of the two companies being the same group



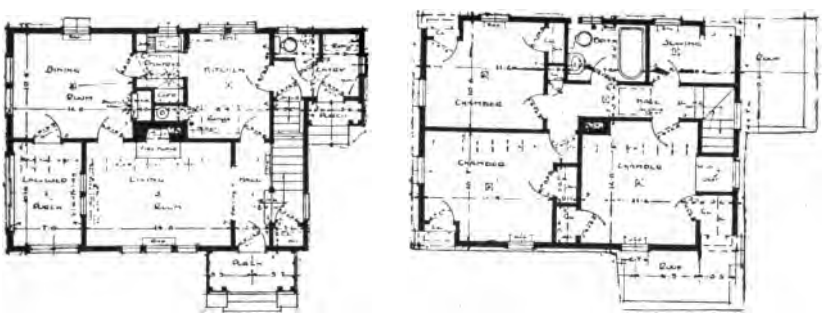
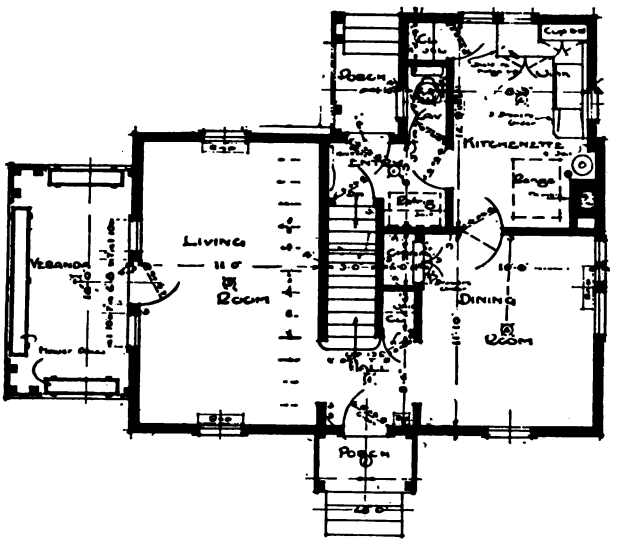
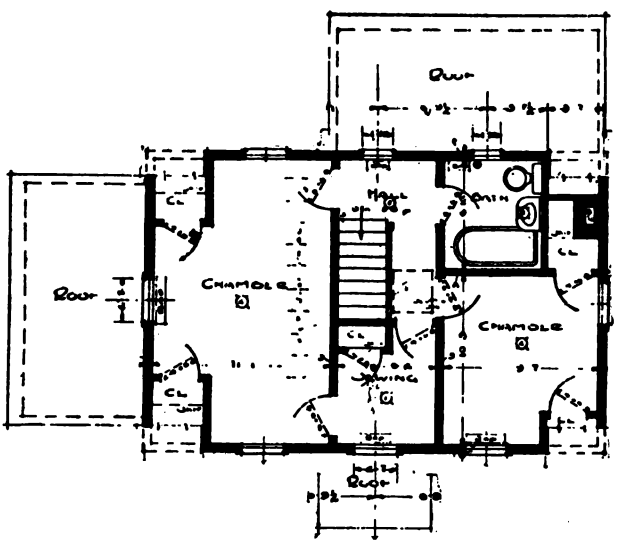


FIG. 102.—HOUSES SOLD UNDER PLAN NO. 2.

Detached, frame houses of 6 rooms, bath, and cellar. Exterior of shingle, clapboard, or stucco. Erected in 1915. Cost varies with finish and ranges from $3,167 to $4,254.



First floor plan



Second floor plan

FIG. 103.—HOUSES SOLD UNDER PLAN NO. 2.

Detached frame houses of 5 rooms, bath, and cellar. Exterior of shingles, clapboard, or stucco. Erected in 1915. Cost varies with finish and ranges from $3,550 to $3,955.

of individuals. The development has consisted in the opening of a subdivision about 20 minutes' travel from the center of a large city in one of the New England States. The city has put in the water and sanitary sewer mains, while the development company has installed storm sewers, paving, gutters, and sidewalks. Public utility companies supply electric current and gas.

Before starting operations the real estate company ascertained the prevailing rent paid by employees of the principal company and made inquiry as to the number who might be willing to buy houses. An expert town planner was engaged to lay out the subdivision; parking and playground area was set aside and residences were located on various streets according to the fixed schedule of costs.

The houses are of a class beyond the means of the low-paid unskilled workmen and are designed to attract the high-paid class of skilled employees. The cost of the houses ranges from $2,400 to $4,500. As compared with the total number employed by the principal company, only a fraction of the workmen are affected by the housing work. The company has altogether 45 houses, capable of accommodating not over 80 or 90 employees. Most of the purchasers of houses thus far have been Swedish mechanics, observed by the company to be thrifty and conservative.

The houses are chiefly detached frame dwellings with clapboard, shingle, or stucco exterior. The New England style of architecture has been observed in their design and plan. All of the houses are plastered, and many are papered inside; all have cellars, hot and cold water connections, and electric fixtures. They are heated by individual steam plants.

The floors are of hardwood and the inside trim is of pine. The houses range in size from five to seven rooms. Closet space is provided in each house.

The lots provided for individual houses range in area from 4,010 to 9,460 square feet. The cost per square foot averages approximately 10 cents.

Details concerning the different types of houses erected are contained in the following tabulation, while the arrangement of rooms and general character of the houses may readily be observed from the plans and pictures shown.

TABLE 125.—DETAILS OF HOUSES SOLD TO EMPLOYEES UNDER PLAN NO. 2.

Type of dwelling.	Number of dwellings.	Cost per dwelling.	Rooms per dwelling.	Cost per room.	Average size and cost per lot.	
					Area (square feet).	Cost.
Type A, single, frame, shingle	1	$3,308	6	$552	5,000	$475
	1	3,382	6	564	4,500	427
	1	3,537	6	599	5,450	599
	1	3,406	6	568	5,100	510
	1	3,267	6	544	5,100	510
	1	3,212	6	535	6,900	690
	1	4,091	6	682	6,565	656
	1	4,110	6	685	4,370	437
Type A, single, frame, clapboard	1	3,309	6	552	5,800	522
	1	3,389	6	565	7,740	696
	1	3,402	6	567	4,800	480
	1	3,632	6	605	5,365	590
	1	3,342	6	557	5,063	506
	1	3,166	6	528	6,850	685
	1	3,930	6	565	7,600	750
	1	4,008	6	668	5,070	507
Type A, frame, stucco	1	4,243	6	707	6,200	527
	1	4,254	6	709	5,960	596
	1	4,245	6	708	7,360	736
Type B, single, frame, clapboard	1	2,915	5	583	4,700	423
	1	2,870	5	574	4,740	426
	1	2,930	5	586	5,334	517
	1	2,888	5	578	6,000	600
Type B, single, frame, shingle	2	3,010	5	602	4,330	387
	1	2,919	5	584	5,730	573
Type C, semidetached, frame, shingle	1	3,584	7	512	6,100	488
	1	3,582	7	512	8,670	693
	2	3,580	7	511	6,480	648
Type D, single, frame, clapboard	1	3,234	6	539	4,670	467
	1	3,384	6	577	4,470	447
	1	3,219	6	537	4,310	431
Type E, single, frame, clapboard	1	2,862	5	572	4,010	401
	1	2,804	5	561	4,550	455
	1	2,791	5	558	4,380	438
Type F, single, frame, shingle	1	3,010	5	602		387
Type G, single, frame, shingle	1	4,109	5	822	5,470	601
Type H, single, frame, shingle	1	4,518	6	753	4,900	490
	1	4,067	6	678	6,480	648
	1	4,025	6	671	5,000	500
Type H, frame, clapboard	1	3,971	6	662	7,370	737
Type H, frame, stucco	1	4,154	6	692	5,920	592
Type I, single, frame, shingle	1	3,636	5	727	4,040	404
	1	3,800	5	760	6,750	675
	2	3,955	5	791	5,100	510
	1	3,674	5	735	5,060	506
	1	3,628	5	726	7,500	750
Type I, single, frame, clapboard	1	3,596	5	719	4,600	460
	1	3,564	5	713	6,440	644
	2	3,581	5	716	7,700	770
	1	3,550	5	710	9,460	946
	1	3,947	5	790	6,990	699
Type I, single, frame, stucco	1	3,796	5	759	5,720	572
	1	3,852	5	770	5,240	524
	1	3,739	5	748	3,830	383
	1	3,585	5	717	7,695	769

HOUSES SOLD UNDER PLAN NO. 3.

The company whose method of selling is described above as plan No. 3 organized a subsidiary company to undertake real-estate development to meet an acute housing famine in the locality. The company was convinced that much of its labor turnover was due to lack of housing accommodations.

The real-estate company proceeded in much the usual fashion of regular real-estate procedure. Land was purchased in a subdivision of the city and laid out by an expert town planner. The city water system was extended to the subdivision. The company installed



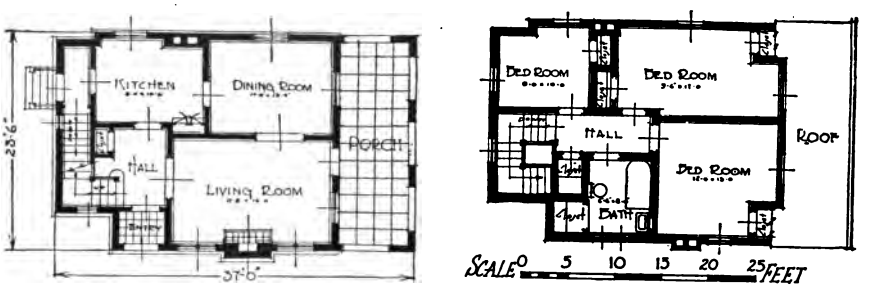


FIG. 104.—HOUSES SOLD UNDER PLAN NO. 3.

Detached house of 6 rooms and bath. Exterior of stucco on hollow tile. Cost in 1917, $3,750.

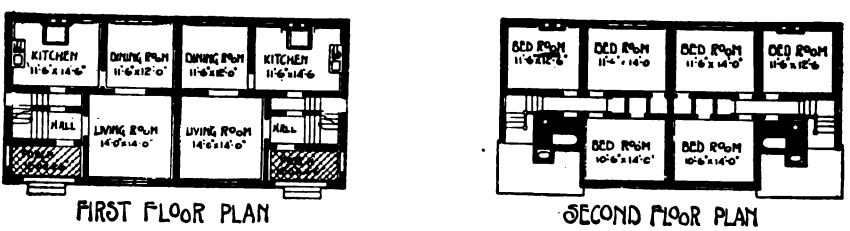


FIG. 105.—HOUSES SOLD UNDER PLAN NO. 3.

Semidetached house of 6 rooms and bath. Exterior of stucco on hollow tile.



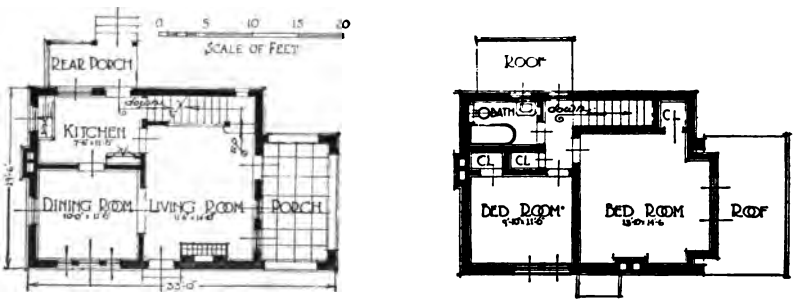


FIG. 106.—HOUSES SOLD UNDER PLAN NO. 3.

Detached brick houses of 5 rooms and bath. Cost in 1917, $3,840.

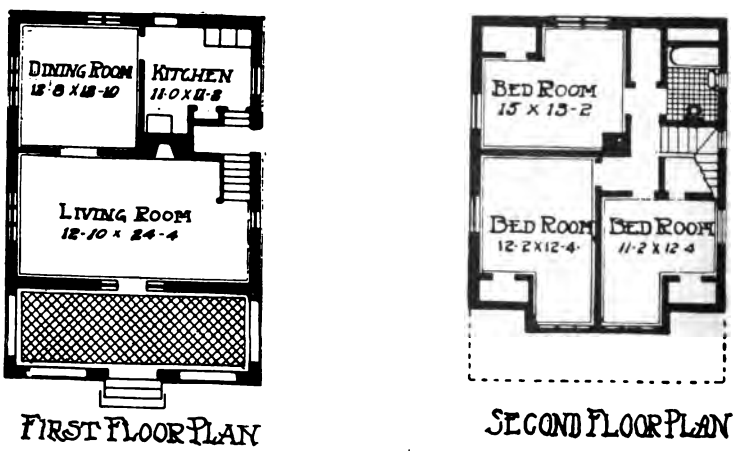


FIG. 107.—HOUSES SOLD UNDER PLAN NO. 3.

Detached house of 6 rooms and bath. Exterior of stucco on hollow tile.



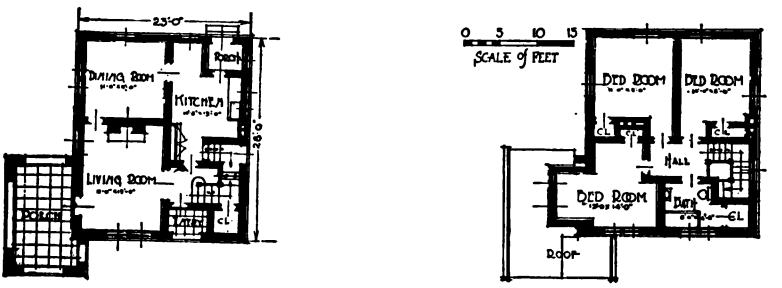


FIG. 108. HOUSES SOLD UNDER PLAN NO. 3.

Detached brick houses of 6 rooms and bath. Cost in 1917, $3.860.



FIG. 109.—HOUSES SOLD UNDER PLAN NO. 3.

Detached house of 7 rooms and bath. Exterior of stucco on brick. Furnace heat. Cost in 1913, $2,434. Lot 65 x 98 feet; cost $400.



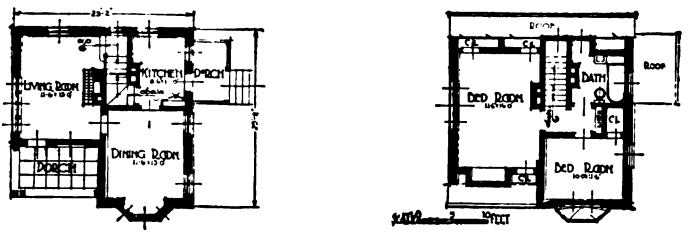


FIG. 110—HOUSES SOLD UNDER PLAN NO. 3.

Detached house of 5 rooms and bath. Exterior of brick on hollow tile. Cost in 1917, $3,865.

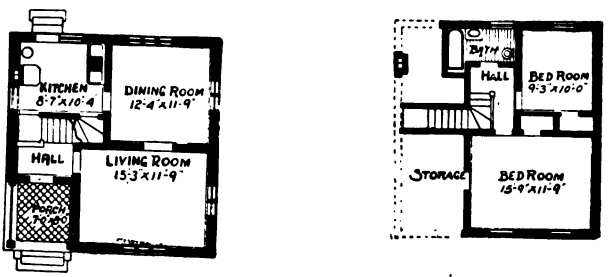


FIG. 111.—HOUSES SOLD UNDER PLAN NO. 3.

Detached house having 5 rooms, bath, cellar, and furnace. Exterior of stucco on hollow tile. Cost in 1913, $1,753. Lot 50 x 113 feet, cost $280.

sanitary and storm sewers, put in gutters and sidewalks, and paved streets. Gas and electricity were brought to the subdivision through the gas and electric company's mains. Inasmuch as the development is a subdivision of the organized municipality the company's responsibility does not extend to such matters as street cleaning and lighting nor to police and fire protection.

The first part of the subdivision to be opened up is located 2½ miles from the center of the large and thriving municipality of which it is a part and a quarter of a mile from the factory of the company. It comprises 300 acres of land and cost about $30,000.

The subdivision has been carefully planned. Park and playground area has been provided to the extent of 28 acres, or 10.7 per cent of the total area of the subdivision. Residences classified according to cost and type have been erected in the special residential section, and a business center has been set aside. The streets are generally 50 to 60 feet wide, but the paved roadway is considerably narrower. The principal avenue is 70 feet wide. The average lot is 50 feet wide by 115 feet deep. No alleys have been established, on the ground that they lessen space for lots, add to the cost of construction and maintenance, and are conducive to unsightly conditions.

The average price paid for the ground in the subdivision was slightly less than $300 per acre. Eliminating the space necessary for streets, sidewalks, parks, and playgrounds, it is found that about four lots are contained in an acre. This makes the value of each lot $75.

The following table shows the cost of various improvements necessary before the construction of houses was commenced. The data applies to 430 lots contained in the first half of the subdivision laid out for building purposes:

Cost of outside improvements for 430 lots.

Cost of property	$30,000.00
Excavating, 100,000 yards	69,175.00
Curb for brick pavement, 11,796 linear feet	3,538.00
Tarvia, 36,078 square yards	46,235.00
Curbs and gutters for gravel roads, 35,958 feet (estimated)	21,574.00
Sanitary sewer system	21,000.00
Storm-water system	8,000.00
Main drain	8,510.74
Bridge (concrete)	9,729.66
Planting trees and shrubs	3,500.00
Office and engineering expense, architects, etc	[5] 21,000.00
Pond drain	2,932.00
Instruments	445.00
Sidewalks, 265,531 feet	23,153.00
Grading about houses, topsoil, and seeding	18,000.00
Miscellaneous (ditches, surveyors' monuments, etc.)	1,882.60
Total	288,675.00

[5] Covers approximately first two years of development work.

The houses in the subdivision are of frame with an exterior of brick veneer, stucco, or shingles, or a combination of these three. The company at present is using an oil stucco, which is proving very satisfactory. The first houses completed had slate roofs, but those of recent construction have been roofed with a patent tar-paper shingle. The interior finish, both floors and trim, is pine. All houses are plastered. Houses built by employees themselves with money advanced by the company have hardwood floors and finish and are in some ways better and more substantial than those erected for sale by the company. All houses have three-piece bathroom equipment and kitchen sinks, are lighted by electricity, and heated by hot-air furnaces.

The data shown in the table below refer to the houses built by the company in its first subdivision during the years 1913 to 1916. As noted above, this part of the subdivision contains 430 lots. The new part of the subdivision, developed in 1917 for the most part, contains 1,500 lots. Details regarding company housing in this new subdivision have not been secured.

The table below shows the number, type, and cost of construction of houses built by the company in its first subdivision:

TABLE 126.—DETAILS OF HOUSES SOLD TO EMPLOYEES UNDER PLAN NO. 3.

Type of dwelling.	Number of dwellings.	Cost per dwelling.	Rooms per dwelling.	Cost per room.	Average size and cost per lot.	
					Size (feet).	Cost.
Single, frame, stucco (type A)	2	$2,377	7	$340	64 by 105	$440
	4	1,753	5	351	56 by 104	260
	1	1,808	5	362	50 by 116	240
	4	2,250	7	321	51 by 103	440
	1	2,260	7	326	71 by 120	480
	4	2,165	6	361	50 by 105	380
	3	2,414	7	345	50 by 104	413
	2	2,330	6	388	59 by 109	460
	3	2,287	6	381	50 by 100	333
	1	2,265	7	324	50 by 100	440
	1	2,465	7	352	50 by 110	440
	3	2,000	5	400	50 by 103	333
	1	2,080	5	416	50 by 120	300
	1	2,013	5	403	50 by 120	320
	1	2,150	5	430	50 by 120	300
	3	2,500	7	357	53 by 117	413
	2	2,430	7	347	50 by 105	440
	1	2,435	7	348	50 by 120	480
Single, frame, stucco and shingle	4	2,434	7	348	54 by 114	420
	1	2,400	7	343	50 by 133	320
	2	2,217	6	370	50 by 110	400
	1	2,300	6	300	50 by 100	440
	2	2,309	7	330	50 by 140	500
	3	2,310	7	330	53 by 118	347
	1	2,496	7	357	50 by 124	600
	2	2,500	7	357	50 by 130	360
	1	2,424	7	346	50 by 110	480
	3	2,375	6	396	(1)	372
	4	2,330	6	388	50 by 127	425
	2	2,330	7	333	60 by 104	580
	1	2,370	7	339	(1)	480
	2	2,511	7	359	53 by 117	400
	1	2,640	6	440	50 by 125	520
	1	2,640	6	440	60 by 110	280
	1	2,635	6	439	50 by 123	320
	1	2,535	7	362	50 by 124	520
	1	2,357	7	337	50 by 130	240

[1] Irregular.

TABLE 126.—DETAILS OF HOUSES SOLD TO EMPLOYEES UNDER PLAN NO. 3—Concluded.

Type of dwelling.	Number of dwellings.	Cost per dwelling.	Rooms per dwelling.	Cost per room.	Average size and cost per lot.	
					Size (feet).	Cost.
Single, frame, stucco (type B)	2	$2,130	7	$304	55 by 93	$300
	1	2,420	7	346	50 by 109	300
	1	2,300	6	383	60 by 109	300
	1	2,290	6	382	50 by 119	280
	7	2,565	6	428	50 by 112	434
	5	2,270	7	324	50 by 106	408
Semidetached, frame, stucco	2	2,125	6	354	50 by 110	440
Single, brick veneer and shingle	2	2,500	7	357	53 by 113	660
	1	2,515	7	359	50 by 112	640
	1	2,585	7	369	60 by 127	400
	1	2,386	6	398	60 by 100	680
	1	2,881	6	480	(1)	720
	1	2,533	7	362	50 by 112	640
Single, brick veneer and stucco	1	2,650	7	378	60 by 100	680
	1	3,050	6	508	50 by 129	720
	1	2,478	7	354	(1)	680
	1	2,630	7	376	(1)	680
	1	2,475	7	354	106 by 73	680
	1	2,623	7	375	50 by 120	640
	1	2,452	7	350	65 by 100	680
	2	2,350	6	392	50 by 142	500
	1	2,223	6	371	52 by 167	480
Single, brick veneer	1	2,583	6	431	50 by 120	640

[1] Irregular.

CHAPTER XVIII.—MAINTENANCE.[1]

Maintenance and upkeep are the most important problems connected with company housing. Employers are practically one in their belief that problems of maintenance are the ones most important for the success of any housing undertaken. Good company housing developments have been found to be greatly marred by failure to maintain the houses and their surroundings properly. On the other hand, relatively poor housing conditions are redeemed to some extent by a good system of upkeep. There are several points which arise for discussion in connection with the problem of maintenance. These are (1) the provision of special sanitary departments in connection with the housing enterprise; (2) provision of a staff of regular clean-up men; (3) issuance of circulars and notices to tenants and residents in the community in order to encourage proper upkeep of premises; (4) provision of lawns, encouragement of gardening, and construction of fences; (5) provision of alleys; and (6) the placing of restrictions on the keeping of domestic animals.

In the largest and most successful housing enterprises provision is made for the creation of a special sanitary department in connection with the housing work. Two of the largest of these departments in connection with company housing projects in Minnesota and a large company operating plants in Virginia and New Jersey have been described elsewhere,[2] and will not therefore be further taken up in this connection.

The repair and upkeep of company houses are generally committed to the repair department of the establishment, with the result that house repairs are given secondary consideration to general plant repairs. On the other hand, the maintenance of a separate repair department in connection with the real estate or housing department means that the houses are given the proper attention, regular men having charge of the repair and maintenance. In fact, the establishment of a separate repair and maintenance department has been reported to be more economical than leaving the work to the plant repair department.

The issuance of circulars and notices to tenants and for posting about premises is a valuable aid in arousing the interest of tenants and is fairly universal among the companies engaged in housing.

[1] The greater part of this chapter has already appeared in the Monthly Labor Review of the Bureau of Labor Statistics for January, 1919 (pp. 289–299), under the title "Sanitary aspects of company housing."

[2] See pages 120, 192, and 193.

Lawns.—In practically all company towns the provision and care of lawns is left to the tenants. Occasionally a company supplies grass seed and prepares the surface, but the upkeep of the lawn is left to the tenant. This is a quite natural procedure; the difficulty lies in seeing that the tenants perform their part of the obligation.

As a rule lawns in company towns are confined to the better section of the community where the houses of higher rental or value are found. There is a distinct contrast in conditions between the houses of the lower-paid unskilled workmen and those of the better-paid mechanics and office employees.

Gardening.—Generally speaking, employers find it necessary to offer some sort of inducement to gardening in order to start the movement. This has been done most generally by a system of prizes or by distribution of handbooks and information on the subject. Free seeds and free plowing are other inducements suggested and practiced by some employers. During the spring of the year that gardening was started at Bridgeport, Conn., the employees of a certain company there kept coming in a pretty steady stream to the real-estate department of the company to inquire after their garden allotments, how much they could get and when the ground would be plowed.

Gardening work by employees was successful, it was observed, in the company towns where the companies took up the problem systematically and in earnest. Once the gardening movement was started, it tended to maintain itself.

A prerequisite, however, in inaugurating the garden movement has usually been found to be the provision of fences for each yard. Where a company did not provide fences, it was observed that those employees who attempted gardens erected fences of their own, very frequently makeshift and nondescript. The importance of fences in stimulating gardening has been recognized in the industrial agreement between the Colorado Fuel & Iron Co. and its employees, to the effect that, "to encourage employees to cultivate flower and vegetable gardens, the company agrees to fence, free of charge, each house lot owned by it." [3]

It may be interesting to note the conclusions in the matter of gardening of the Scottish Royal Commission of Housing, whose report appeared in 1917. The scarcity of gardens, the commission concludes, can not be attributed to the disinclination of the workers for the extra work involved; the lack is more likely due to other factors, such as (1) short tenure of the dwelling and garden; (2) inadequate fencing; (3) remoteness of the garden from the house. The length of the working-day (including therein the time of going

[3] For full text of agreement see Monthly Review of the Bureau of Labor Statistics, for December, 1915, pp. 12-22.

to and coming from work) is also a prime factor in determining an inclination for gardening. There is this to be said, however, that the women of the household are sometimes the ones who take the most interest in the gardening and do much of the actual work connected with it.

Alleys.—In all mining towns alleys are recognized as essential. The survey disclosed only one company mining town where it was proposed to eliminate alleys. Where inside sanitary plumbing is not in use and where hydrants and outhouses must be used, alleys facilitate the proper care and maintenance of these. Garbage and rubbish may readily be collected by use of these thoroughfares. It may be noted, however, that one company town in New England instead of using up space for the provision of alleys provided for each of its tenants a stone box at the rear of the house in which all rubbish was deposited and burned from time to time. This, however, was a town where inside sanitary plumbing was in use.

Keeping of domestic animals.—One of the commonest difficulties connected with maintaining company towns in a clean and sanitary condition has been the lack of restrictions on the keeping of domestic animals. Very frequently, however, this matter is regulated by State law and is therefore beyond company control. Strict regulations, furthermore, against the practice create an element of hardship for the low-paid unskilled workman who may desire to eke out his income with a cow or chickens. While the keeping of such domestic animals as cows and chickens is generally allowed, rules, when issued, are usually directed against the keeping of pigs.

Disorderly tenants.—While a great many companies have rules requiring the tenant to leave the company house if his conduct is disorderly or if he fails to keep his premises in sightly condition, the enforcement of such rules depends very largely upon the state of the labor market. Thus in a time of shortage of labor the employer would modify his rule in order to keep his labor at the plant. It may be observed that as a general practice the rule was more frequently relaxed than observed.

Sanitation.—Garbage collection in the majority of company towns is provided by the companies themselves, except where the housing development lies within an organized city where municipal collection is maintained. Weekly collections are most common but several companies reported making annual collections. This can only mean an annual clean-up, and not garbage collection.

TABLE 127.—FREQUENCY OF GARBAGE COLLECTIONS IN COMPANY TOWNS, BY INDUSTRY AND STATE.

Industry and State.	Towns in which collection of garbage was made—						Towns in which no garbage collection was provided.	Total.
	Daily.	Semi-weekly.	Weekly.	Semi-monthly.	Monthly.	Bi-monthly and less frequently.		
Bituminous-coal mining:								
Pennsylvania and West Virginia	2	3	[1] 6	1	3	4	7	[2] 26
Alabama, Tennessee, and Kentucky	[3] 2	[4] 3	3	4		6	6	[5] 24
Colorado and Wyoming	1	[6] 1			1			[7] 3
Total	5	7	9	5	4	10	13	53
Anthracite-coal mining		1	[8] 4			3	16	[9] 24
Iron mining:								
Michigan, Wisconsin, and Minnesota		2	[10] 3					5
Alabama		1				1	1	3
Total		3	3			1	1	8
Copper mining: Michigan and Tennessee		[11] 3		1		1		5
Other copper and gold mining	1	2	1				1	5
Iron and steel and allied industries:								
Northern district	3	[12] 4	[12] 6	2		1	6	[14] 22
Southern district			3					[15] 3
Total	3	4	9	2		1	6	25
Textile manufacture:								
Northern district		[13] 2	[16] 4					[17] 6
Southern district	[18] 3	[19] 15	17		1		4	[20] 40
Total	3	17	21		1		4	46
Miscellaneous industries	3	4	7				4	18
Grand total	15	41	54	8	5	16	45	184

[1] "Weekly in summer" reported by one company; none in winter.
[2] Five other companies reported as follows: "When notified by tenants"; "As required"; "Disposed of by drain in back yard, which is flushed"; company did not know; and "every two months."
[3] One continually; 1 man on job all the time.
[4] One semiweekly in summer, weekly in winter.
[5] Including 1 biweekly in summer, weekly in winter, and 1 weekly in summer only, and 1 continually, on job all the time.
[6] There are 12 localities operated by this one company.
[7] Two other companies reported, "When necessary"; "constantly."
[8] Includes one company collecting garbage semiweekly in summer.
[9] Another company reports "Man on job all the time."
[10] Two companies collect only semimonthly in winter.
[11] One in winter; daily in summer.
[12] In two cases by municipalities.
[13] In two cases by municipalities; 1 company collects only in summer.
[14] Eight other companies within city or borough where municipal collection is provided.
[15] One other company reports "Man on job all the time."
[16] In one case by municipality.
[17] Three companies within city.
[18] One other reports "Constantly."
[19] Including 2 by municipalities and 5 reporting semiweekly in summer and weekly in winter.
[20] Four other companies within city, where municipal collection is provided.

Where only outside sanitation was provided the prevailing type of privy was the open-vault kind. A few companies (15 out of 213) have adopted a water-tight concrete vault, and in twenty-odd communities the can type has been installed. Where the can type is used a man with a team has to make regular weekly rounds for the disposal of the

contents. In one of the towns of the Birmingham, Ala., district, operated by one of the largest companies in that region, the can type of privy has been adopted quite generally. This company also carefully protects its outhouses by screening, and disposes of the contents by a system of water decomposition.

In the coal-mining region of Pennsylvania, both bituminous and anthracite, the old-fashioned method of scavenging prevails. Only in rare instances, however, was the practice reported of moving the privies from place to place as the vaults became full. The great advantage of the can type of privy is that it makes frequency of disposal absolutely necessary, and it is only in those communities where frequency of cleaning is reported as weekly or semiweekly that that type of privy is found. The practice as to frequency of cleaning privies is noted in the statement below for 150 companies which reported on that point.

TABLE 128.—FREQUENCY OF CLEANING PRIVIES IN COMPANY TOWNS.

Frequency.	Number of towns.	Per cent of total.
Semiweekly	13	8.6
Weekly	18	12.3
Semimonthly	7	4.6
Monthly	4	2.6
Semiannually	11	7.3
Annually	29	19.3
Irregularly	68	45.3
Total	150	100.0

Condition of yards and premises.—The condition of yards and houses in company towns differs so markedly in the same locality and among the same class of employees that it seems reasonable to conclude that the differences in care and upkeep are due to the care and attention given the matter by the company and not, as has been frequently asserted, to the tendency of the workmen to keep their premises in an unsightly condition. Adjacent mining towns, for instance, in the Pennsylvania soft-coal region, each owned by a different company, differ very greatly in matters of maintenance. Generally speaking, where the company observes system in keeping streets and alleys clean and in repairing houses and has a regular man or corps of men to do that work, yards, too, as a whole are observed to be in better condition of upkeep. A factor in the case is the provision by the employer of rubbish and garbage cans for the use of the tenants. It is the experience of the general superintendent of one of the largest coal and coke companies in western Pennsylvania that once the company provides an adequate house and sightly premises the employees, and particularly the wives of employees, take a new interest in the house and its maintenance. Continuance of the improvements is

desired, even demanded. A standard of comfort and decency of surroundings has been created, and a desire for its continuance persists. The employer is in an advantageous position to secure and maintain that standard of comfort and decency in surroundings of his tenants because his regulations in that respect are backed by the authority to discharge from employment. In spite of that fact, however, there is at times a tendency on the part of the employer to connive at unsightly premises and to be careless in regard to enforcing rules whenever there is a shortage of labor or difficulty in securing it. This would seem to be a shortsighted policy, since in the long run the reputation of a company town for cleanliness, sightliness, and availability of recreational features is bound to attract labor, if one may rely on the opinions of those closest to the situation.

On the side of the employee it may be observed there is frequently a reluctance to make any demands for proper maintenance and improvements in the house, particularly when labor is plentiful and competition for jobs is keen, because of the inevitable control which the employer has over the employee by reason of owning the house and holding over him the threat of eviction.

CHAPTER XIX.—RESULTS OF HOUSING.

PROPORTION OF LABOR FORCE AFFECTED.

Employers house about one-third of their employed force. Thus, considering the 213 companies covered by the Bureau's survey it appears that they housed 160,645, or 34.4 per cent, out of a total of 466,991 employees, as brought out in the table below. The largest proportion housed in any industrial group is 80.4—15,035 out of a total of 18,694—in the bituminous-coal mining region of the South, which here includes Alabama, Tennessee, and Kentucky; the next largest proportion, or 71 per cent, is found in the cotton mills of Alabama, Georgia, and North and South Carolina, followed in order by bituminous-coal mining in Colorado and Wyoming (67.8 per cent) and in Pennsylvania and West Virginia (56.1 per cent). The lowest proportion housed is in the mining region of the Southwest, where 857, or 15.9 per cent of a total of 5,398, are housed, as reported by six companies in that region. It should be explained, however, that in this region practically none of the unskilled laborers (who are Mexican) are accommodated in company-owned houses; they are left to provide their own houses and shelters upon company-owned land, inasmuch as the companies in this region, as elsewhere in mining districts, own all land immediately surrounding that occupied by the mines. The Mexican settlements upon company land in this region are controlled and policed by the mining companies, who therefore become responsible for housing and sanitary conditions in those settlements.[1]

TABLE 129.—NUMBER AND PER CENT OF EMPLOYEES HOUSED, BY INDUSTRY AND STATE.

Industry and State.	Number of employees.	Number of employees housed.	Per cent of employees housed.
Bituminous-coal mining:			
Pennsylvania and West Virginia	78,218	43,877	56.1
Ohio and Indiana	1,287	688	53.5
Alabama, Tennessee, and Kentucky	[a] 18,694	[a] 15,035	80.4
Colorado and Wyoming	4,644	3,148	67.8
Total	102,843	62,748	61.0
Anthracite-coal mining	[b] 90,608	[b] 20,660	22.8
Iron mining:			
Michigan, Wisconsin, and Minnesota	[c] 5,433	[c] 1,447	26.6
Alabama	1,497	805	53.8
Total	6,930	2,252	32.5

[a] Not including 1 company with 500 employees; number housed was not reported.
[b] Not including 1 company with 25,600 employees; number housed was not reported.
[c] Not including 1 company with 1,450 employees; number housed was not reported.

[1] See pages 123 to 127.

TABLE 129.—NUMBER AND PER CENT OF EMPLOYEES HOUSED, BY INDUSTRY AND STATE—Concluded.

Industry and State.	Number of employees.	Number of employees housed.	Per cent of employees housed.
Copper mining: Michigan and Tennessee	10,064	3,290	32.7
Other copper and gold mining: Arizona, New Mexico, and Colorado	5,398	857	15.9
Iron and steel and allied industries:			
Northern district	[a] 116,904	[a] 20,625	17.6
Southern district	3,180	930	29.2
Total	120,084	21,555	17.9
Manufacture of explosives	28,777	10,840	37.7
Textile manufacture:			
Northern district	[b] 10,624	[b] 2,047	19.3
Southern district	35,643	25,289	71.0
Total	46,267	27,336	59.1
Miscellaneous industries	[c] 56,020	[c] 11,107	19.8
Grand total	466,991	160,645	34.4

[a] Not including 7 companies with 21,050 employees; number housed was not reported.
[b] Not including 1 company with 700 employees; number housed was not reported.
[c] Not including 2 companies with 2,460 employees; number housed was not reported.

On the whole the largest proportion of employees housed in company dwellings is found in the mining industry, where conditions of isolation and inaccessibility make it imperative for the employer to do housing work. The comparatively low proportion housed in the anthracite-mining industry as compared with the bituminous-coal region is accounted for most probably by the greater settled condition of the neighboring communities in that region.

From a geographical point of view it is quite evident that employers in the South who are engaged in housing work provide accommodation for a larger percentage of their employees than do employers in the Northern States. Taking those industry groups where sufficient data were secured to make geographical segregation feasible, the result is as follows:

TABLE 130.—NUMBER AND PER CENT OF EMPLOYEES HOUSED IN SPECIFIED INDUSTRIES, BY GEOGRAPHICAL DIVISIONS.

Industry group.	Number employed.		Number housed.		Per cent housed.	
	Southern group.	Northern group.	Southern group.	Northern group.	Southern group.	Northern group.
Bituminous-coal mining	18,694	84,149	15,035	47,713	80.4	56.7
Iron mining	1,497	5,433	805	1,447	53.8	26.6
Iron and steel and allied industries	3,180	116,904	930	20,625	29.2	17.6
Textile manufacture	35,643	10,624	25,289	2,047	71.0	19.3
Total	59,014	217,110	42,059	71,832	71.3	33.1

OVERCROWDING.

In only a few instances was the actual population in company houses reported. The village population was reported by three companies in the southern cotton-mill region. All three villages are in mill districts on the outskirts of cities. Mill No. 1 houses 1,500 persons in 878 rooms. Mill No. 2 houses 3,431 persons in 2,638 rooms. Mill No. 3 houses 1,000 persons in 465 rooms.

The last mentioned was one of the worst cases of overcrowding seen. Eighty new four-room bungalows are largely used by two households each; the three-room houses in many cases contain more than one family, and the 10-room tenements (five-room semidetached houses, but "so cut up by families that we call them tenements") are occupied each by a number of households, one noted by the agent housing a total of 30 or more persons. This company is said to be building constantly in an effort to do away with this overcrowded condition. However, it is one of the companies reporting the rule that a family must provide one hand for each room.

The companies in the cotton-mill region generally insist that each room in the house shall provide one operative for the mill. The number of hands a family can supply for a mill is a factor in determining the allotment of housing accommodations. This condition, it is observed, is closely bound up with the question of child labor.

Even where the rule of one employee per room does not obtain and where experienced welfare workers are making every effort to raise the standards of living it is said that some families still sleep all in one room, "as they did in the mountains." The opposite practice of using all rooms for sleeping purposes results in a condition deplored by social workers in the mill communities, since the young people have no sitting room in which to entertain guests. The use of couches instead of beds in the front rooms is an innovation being urged by one welfare secretary.

The isolated location of the villages is one cause of the evil of overcrowding, since the housing activities of the companies do not always keep pace with an increase in spindleage or the erection of additional mills. The best employers anticipate such a condition, and several of the communities visited in 1917 were putting up scores of new houses in preparation for the influx of labor due to increased activity in the industry. Quite commonly the oldest employees are given the preference in the allotment of new houses; not infrequently, however, they ask to be allowed to stay in the houses they have occupied for years. Where a shortage of houses exists, the families are compelled to take boarders or to occupy fewer rooms, both of which measures are resented by all but the least desirable among the workers.

A certain company town in Virginia gave a very complete statement of the population of its houses by race, sex, and age. From the data furnished by this company it appears that 9,481 white persons occupied 1,949 houses, making an average of 4.9 persons, including men, women, and children, per dwelling. As the average number of rooms per dwelling as reported by this company works out to between five and six, the average number of persons per room appears to be somewhat less than one.

In the southern company towns a certain feature of the houses tends to encourage overcrowding. The small four-room bungalow dwelling so characteristic of the region has two doors opening upon a front porch and inside doors connecting each pair of front and back rooms. By closing the inside doors the pair of rooms on each side may be made into a two-room dwelling. In times of housing shortage this has been done, but recently the companies more scrupulous in such matters have frowned upon the practice. While this particular feature of house construction can not be said to be a cause of house crowding, it is none the less an incentive to it.

Company housing in general is defective in so far as no rules are made against the keeping of boarders and roomers. Nor is the lack of such a rule offset, except in rare cases, by the provision of houses especially constructed for keeping roomers and boarders. Frequently the keeping of roomers and boarders is encouraged. A mining company in West Virginia encouraged the keeping of boarders by offering a bonus for each boarder in a company house. In a certain town owned by a steel-car-manufacturing company many of the detached houses were occupied by two families, and no restrictions had been placed on boarders. The relatively high rents in the Polish section of a certain New England textile town were evidence of the fact that the occupants were understood by the company to be taking in roomers and boarders to eke out their income. The houses had not, moreover, been specially constructed with a view to such a contingency.

In short, the whole system of company housing can readily lead to a connivance on the employer's part toward overcrowding. The employee is frequently ready to take an excessive number of lodgers to secure the additional income. Likewise it is to the interest of the employer to use his housing investment to its maximum capacity. And in a time of high production and a boom market the temptation to use the houses to the limit of capacity is greatly increased.

CLASS OF EMPLOYEES HOUSED.

Generally speaking, over three-fourths (76.7 per cent) of the 213 companies covered by this study rent company houses exclusively to their employees; a trifle over one-fifth (22.2 per cent) also rent their

houses to outsiders. Among nonemployees are included those who follow certain supplementary occupations in the community, particularly as petty tradesmen; also former employees or their widows, renting to these being very largely a matter of charity. In one cotton-mill community in the South houses are rented to the storekeeper, the doctor, the minister, and the mission workers at one-half the usual rental rate. Houses rented to outsiders are very frequently surplus houses the employer may have, although surplus houses are rarely available. In any case employees are always given the preference.

As no effort was made to ascertain definitely what proportion of tenants in company houses were outsiders, little information was secured on that point; one steel company, however, reported that 5 per cent of its houses were occupied by nonemployees.

Employers are not sufficiently emphasizing the matter of providing houses for the unskilled or immigrant laborers. Seven companies of the 213 report that they provide houses for unskilled workers only, while two report that they do not house that class of workmen at all. Both of the latter are companies in the copper region of Arizona, where the unskilled labor is largely Mexican and lives in segregated villages on company land. The Mexican laborers build their own hovels from lumber ends, dry goods boxes, and patched-up pieces of corrugated roofing, adobe, and old bricks. Frequently they burrow in the hillside.

The general result of the inquiry as to the class of employees housed is as follows:

	Number.	Per cent.
Total number of companies	213	100.0
Number renting company houses to employees only	165	77.5
Number renting to all classes of employees	161	75.6
Number renting company houses to nonemployees	48	[2] 22.5
Number renting to skilled and unskilled workmen only	27	12.7
Number renting to unskilled workmen only	7	3.3
Number renting to higher officials and nonemployees only	2	.9

Tenants for company houses are not selected so much on the basis of whether they are skilled or unskilled men as on the basis of their indispensability and faithful and loyal service with the company. As already indicated, only about one-third of the employees of the different companies are provided with company houses, and there is necessary, therefore, a careful selection of tenants. A certain large mining company operating in one of the North Central States gives preference in housing to its foremen, bosses, mining captains, mechanics, and skilled labor generally, and after an application has been submitted for a house inquiry is made as to the length of service of

[2] Two companies rent to higher officials and nonemployees only.

the applicant with the company and the likelihood of his becoming a permanent employee. Another company requires a minimum of three months' satisfactory service before granting a request to rent a house. Another company in considering an application for a house looks into the matter of the condition in which the employee kept the house he formerly lived in.

Sometimes certain types or classes of men are excluded from company houses. One company representative reports that Russian Finns as distinguished from Swedish Finns are not given company houses because of their socialistic tendencies. The more drifting undesirable type of labor is not taken into company houses.

In looking up the record of an applicant for a house the companies usually utilize the services of the bosses or foremen and accept their recommendations regarding men already in the employ of the company. Sometimes the visiting nurses, the welfare worker, or the safety inspector is in possession of information concerning the applicant for the house. New men are required to fill out formal employment cards detailing their past record of employment and positions held, and then to file a formal application for a company house.

CLASS OF EMPLOYEES HOUSED, BY INDUSTRIES.

Of 32 bituminous coal companies in Pennsylvania and West Virginia only two do not rent to their higher officials—i. e., mine superintendents and bosses—and one does not rent to its skilled employees; but all of them rent to their unskilled men. In the case of one company the policy differed at its two establishments; in one case it does not rent to its skilled men, while in the other it includes all classes of employees. Only five companies rent to nonemployees. Such nonemployees usually include local storekeepers, teachers, ministers, doctors, and others who follow supplementary occupations in the community.

When a mine is abandoned it is the policy to dismantle the houses or to rent or sell to anyone who may desire to buy.

Of three companies in the soft-coal fields of Ohio and Indiana only one rents to its higher-paid staff. In the southern coal field one company out of a total of 24 rents only to its unskilled labor force, while another has a few additional houses reserved for some of its higher staff. Nonemployees are very generally excluded, among those few included being some railroad men, the schoolteachers, ministers, and doctors.

In the Colorado and Wyoming bituminous-coal field one company out of five rents only to unskilled men; no nonemployees are included in any case.

In the anthracite-coal region four companies out of a total of 24 do not provide houses for their higher staff; one company, which in

most of its establishments provides houses for the staff men, in two localities has provided improved semidetached houses of brick and concrete construction for its skilled and unskilled labor force exclusively. These two localities, it should be said, however, accommodate only a very small proportion of the men; at the time of the survey there were only 40 semidetached houses (80 dwellings) thus available, while the number employed at the shafts to be accommodated was about 3,600.

In the anthracite-coal region it is characteristic that those outsiders to whom company houses are rented have been former employees; of 14 companies renting to outsiders, 10 rent to former employees or their families. One company reports 158 houses out of 1,134 as being rented to nonemployees; and another 227 out of 1,469. One company reports a charity rental to an outsider or nonemployee.

In the iron district of Michigan, Wisconsin, and Minnesota all employers reporting (seven covered altogether, of whom two do not report) rent houses to all classes of their labor force, but do not rent at all to nonemployees; the same is true for southern mine operators (three companies).

In the copper districts, comprising Michigan and Tennessee (five companies altogether reporting), the employers provide houses for all types of employees; in no cases are houses rented to outsiders, except that one company stated that any surplus of houses might be let to nonemployees. On the other hand, in the copper and gold region of the Southwest (Arizona and New Mexico) two companies do not rent at all to unskilled employees—that is, the Mexican laborers—all except one of six companies reporting rent to the higher staff men. As to renting to the unskilled workers it should be said that all the companies in the Southwest rent land to Mexican laborers, usually a separate section where Mexicans only are allowed. These villages the companies police, and provide for their sanitary inspection (for a description of such a community see Monthly Labor Review for September, 1918, pp. 278–283), and are in every way responsible for conditions found in them.

These companies rent only land to outsiders, but in one case a house was rented to a petty tradesman in the village; and any surplus houses may also be rented to outsiders.

There were 24 companies engaged in the iron and steel and allied industries which furnished information on the point in question. One of these companies does not rent but sells its houses. Of the 24, 2 do not rent to unskilled laborers, but only to the staff and skilled men, while 8 do not rent to staff men; all the other companies rent to all classes of employees.

Although in the Bureau's inquiry the question was not asked as to what proportion of the number housed belong in the three classes of employees considered—namely, higher officials, skilled and unskilled workers—one large steel company in New York State, employing about 7,600 men, reports that it houses 40 higher officials, 204 skilled workers, and 310 unskilled men. Unfortunately the different proportions of these classes of workers in the labor force of this company are not known.

In the group of 25 iron and steel companies one company which does not rent any houses to its unskilled men, does, on the other hand, rent to nonemployees; and seven other companies also rent to outsiders. In one case it is stated that 5 per cent of the renters are nonemployees. The outside renters here are of the same type as already mentioned in other industry groups—namely, persons following the petty trades and supplementary occupations in the community.

Instead of renting to its higher officials, one company of three reporting sells them houses and rents to other classes of employees. All iron and steel companies rent to both skilled and unskilled workers.

The two companies manufacturing explosives covered in the inquiry rent to all classes of employees; this is true also of the six New England textile manufacturers, with the exception of one case where no houses are rented to higher officials. In one case among these companies 10 per cent of the company renters were outsiders; the other companies reported that they rented some houses to nonemployees.

All the 48 cotton-manufacturing companies of the southern district comprising Alabama, Georgia, and North and South Carolina rent company houses to both skilled and unskilled workers, while 33 rent also to higher staff men. Except in two instances no houses are rented to nonemployees. In the exceptions noted the houses are rented to the local doctor, some railroad men, the teachers, and the storekeeper. One company reported that the storekeeper, doctor, and mission worker are given houses at one-half the regular rental rate.

Among the 17 miscellaneous industries (including manufacture of chemicals, chocolate, electrical supplies, zinc smelting, rubber goods, plumbers' and steam fitters' supplies, cordage, cotton machinery, and aluminum ware) one company rents only to higher officials and outsiders, one only to skilled and unskilled men, while the others rent to all classes of employees, except two, which do not rent but sell houses. Five of the 17 companies rent also to nonemployees.

RESULTS ARISING FROM LOCATION OF COMPANY TOWNS.

Proximity of the employee to his work has naturally been secured by company housing. On the other hand, nearness to larger community life has not generally been secured. This is particularly true of mining towns, where the remoteness of the mineral deposits takes the towns away from settled or community life. Manufacturing company towns are, as a rule, quite accessible to larger communities and group themselves on the outskirts of the metropolitan cities. In the mining districts the greatest distance between any company town and the mine was a mile and a quarter. In most instances the towns are within walking distance of the mine. The failure to provide recreational activities in the company towns or to locate the company towns in the neighborhood of larger cities, where recreation may be secured, has very frequently caused difficulty in retaining the labor supply. Workmen are likely to leave unless means of recreation are reasonably near at hand. In some instances in the bituminous-coal region of Pennsylvania workmen were found to be willing to commute from the larger cities to the mines, even as far as 6 or 7 miles, rather than live in company houses.

EFFECTS OF PROVISIONS IN LEASES.

The provisions of the lease which the employee tenant agrees to observe have a potent influence in times of strikes or other disturbances of the relation of employer and employee. Analysis of the notice to vacate and of the restrictions placed upon the employee with regard to allowing third parties access to the premises brings out this point, as does also the failure in some cases to use any formal lease whatever. Provisions contained in the leases for the care and maintenance of the houses are of minor importance.

Very few employers use any formal written lease in letting company houses to their employees. Such informal lettings without a lease constitute what are termed "tenancies at will," terminable at the pleasure of either party, without notice, or upon such notice as may be fixed by law in the different States. Where, as is usually the case, it is understood that the tenancy continues for the term of the employment and terminates upon discharge or voluntary withdrawal from service, no notice to vacate the premises has been held to be required.[3]

It was stated by some employers that the formal leases, when used, were merely records of the tenancy and rarely enforced in their details, particularly those provisions relating to the upkeep of the premises on the part of the tenant employee.

[3] Hackett v. Marmet Co., 8 U. S. App. 149.

Of 57 leases which were secured for analysis in 8 no notice to vacate is called for; 6 require notice of less than 5 days; 12 of 5 days; 1 of 6 days; another of 7 days; 13 of 10 days; 5 of 15 days; and 1 of 30 days. In the other 10 the period of notice is not specified. Furthermore, about half of the leases contain provisions to the effect that the tenancy is to be considered coincident with employment[4] and this, as has been seen, nullifies the effect of the period of notice to vacate. On the whole, therefore, both the formal leases and the informal lettings show that the landlord and tenant relation of employer and employee is severed upon short notice or upon no notice at all; it is quite informal.

In addition to the brevity or lack of notice required, the provisions of leases as to the rights of third persons to have access to the premises become of great importance in times of strikes.

Such a provision as the following is contained, in effect, in 5 of the 57 leases received for examination:

> Necessary ingress and egress over the adjoining premises of the lessor to reach the nearest public highway is hereby given to the lessee and members of his family living with him. A way of ingress and egress may, however, be designated by the lessor to the enjoyment of which lessee and his family will thereafter be restricted; and the lessor may at any time forbid ingress and egress over adjoining premises of the lessor to reach the leased premises to any or all persons other than the lessee and members of his family living with him.
>
> And it is also understood that the party of the first part, its successors and assigns, reserves the right at any and all times to prevent the use of and eject and remove from all the streets, lands, alleys, open places of the town of which the above premises are a part of the mining town and from all other property of the company, any person or persons disorderly or objectionable to its successors or assigns; and whether said person or persons have or have not been invited thereupon by the occupant or occupants of said premises.
>
> [The tenant agrees] not to use, allow, suffer, or permit the use of said land, or any part thereof, or any way or road upon the same, or any way, road, or approach thereto upon lands of lessor, for any other purpose than that of ingress and egress from and to the public road for said lessee and the members of his family, and not to do any act or thing, or suffer or cause the same to be done, whereby the public, or any person or persons (other than the lessee and members of his family), may be invited or allowed to go to or trespass upon lands of the lessor adjoining or near the lands herein let, or ways leading thereto, or to or upon said lands so let.
>
> The lessee agrees not to use, suffer, or permit the use of other lands or private way or road through or over other lands of the lessor to said premises or for any purpose other than that of ingress and egress to and from the public road for the lessee and members of his family, and to do no act or thing nor suffer nor cause or permit the same to be done whereby the public may be invited or allowed to go or trespass upon the land of the lessor.

[4] A definite and clear-cut provision of one lease to that effect is the following: "This lease is made for the purpose only of providing the lessee with a temporary dwelling place for himself and family during his employment by the lessor, subject to the absolute right reserved by the lessor to terminate the same and all rights of the lessee hereunder at will." In another lease it is declared that the premises were rented as "an incident to such [employment] and for the better performance of the service," while another reads: "This lease is to continue from month to month thereafter while the said party of the second part continues in the employment of the said party of the first part."

[The lessee agrees not to] invite, harbor, or allow any tramp or character who is objectionable in any way * * * or permit any improper or suspicious person to come upon or remain upon the said premises.

The implication of a lease in regard to a strike is not usually directly brought out in its terms. An exception to this general rule, however, is noted in a specific statement contained in a certain "license for occupancy," as it is termed, to the effect that the tenant agrees "to leave peaceably within five days after work has been suspended * * * in consequence of a strike."

Finally, it may be observed, a company town is private property and all persons entering it are technically trespassers. Notices to that effect are frequently posted in the towns.

Provisions of the leases are not of importance in relation to the housing as such, as distinguished from the housing problem as a social question. Very few leases contain specific restrictions for the upkeep and care of the house. An occasional lease contains a prohibition against keeping certain domestic animals upon the premises, particularly hogs; also prohibitions against erecting any or additional buildings on the rear of the lot, one comprehensive provision reading that no sheds, shanties, bake ovens, chicken coops, or cow stables shall be erected on the rear of the lot. Another lease prohibits the cultivating of gardens on the lot, excepting only flower gardens and ornamental shrubbery. Only a few companies prohibit the keeping of boarders, but as all of them prohibit subletting without consent of the lessor it is therefore quite within their power to prevent excessive crowding because of roomers. One company expressly prohibits occupation of its four-room houses by more than 10 persons, while another permits boarders, but requires that they be company employees.

The restrictions noted above are usually inserted in separate rules and regulations which are made part of the contract of employment rather than of the lease.

The following shows some rules contained in the lease of a certain cotton mill:

1. Tenements are rented by the week, the rent being collected twice a month from the wages of any of the family or boarders that are working. At least three steady workers are necessary in order to get or keep a tenement. Tenements shall be vacated on seven days' notice given by the company. No tenant will be allowed to relet any part of their tenement. Changes in the list of boarders must be reported to the person having charge of the tenements.

2. All tenements must be kept clean, and when vacated must be delivered up clean and in good condition.

3. In houses with one tenement above another it is the duty of the lower tenants to shut off the water in the cellar in cold weather, at night, and they will be held responsible for any damage which may occur from failure to do so.

4. Swill must be put in cans with covers, and ashes must be put in barrels, and in no case shall they be deposited in the house or cellar.

5. No one will be allowed to keep swine, fowls, pigeons, or rabbits at the blocks in the center. Fowls and pigeons may be kept on the terrace, but not in the houses.

6. Tenants must remove the snow from the sidewalks in front of their tenements as soon as possible after it stops snowing, and ice as soon as possible after it is formed, or cover it with ashes.

7. No repairing of any kind shall be done, or nail or any other thing driven or put up, or anything taken down in the houses without the consent of the agent of the company.

8. Tenants must pay for any damage done to their quarters beyond ordinary wear and tear, and for any failure to comply with these regulations.

9. When tenements are vacated, the keys of the same must be returned to the office, when the tenements will be examined, and if found clean and in good order a settlement will be made and deductions will be made for want of cleanliness or damage.

10. The overseer of the paint shop has general supervision of the company's houses, including all matters of cleanliness and repairs, and tenants must comply with his instructions.

11. Rule concerning care of water-closets: (1) No foreign substance, such as glass, crockery, metal, waste, cloth, etc., should be put into the bowl, trap, or pipe, so as to cause stoppage; (2) the seat must not be used to stand on, or for any other purpose, so as to get it out of place and cause leakage of joints; (3) lead pipe or traps must not be tampered with in any way; (4) every precaution must be taken in cold weather to prevent freezing. Rooms must be kept warm, and on very cold nights a handful or more of salt put into the bowl, and water shut off in cellar by each tenant.

12. A compliance with the foregoing rules and regulations is the only condition upon which any person can obtain a tenement from the company or continue their occupancy.

Frequently employers rent to their employees land upon which the latter build houses for themselves. This is true of practically all mine operators, and less frequently so of manufacturing employers. As the formal leases obtained were few, no general conclusions can be drawn from them. Those land leases secured, however, are characterized by impermanency of tenure; they run for a short period, such as a year; a few are for five years. In some instances the term clause reads "while in the employ of the said party of the first part." Generally speaking, the employer grants nothing more than a license to occupy.

While some land leases provide for compensation for the building erected at an appraised valuation at the end of the term or upon vacation of the premises, others provide for no compensation, the building becoming the property of the employer landowner if not removed from the premises. This condition is something of a hardship in the case of mine locations, as all the adjoining land is usually owned by the operator.

SUMMARY OF RESULTS OF HOUSING.

Although the primary result of company housing is the supplying of accommodations for an existing labor force, several incidental results have flowed from it. Speaking broadly, it has been a factor

in the control of the labor situation by employers and has had a certain influence upon the social and health conditions surrounding employees. But such results are not capable of statistical measurement, and unfortunately are not always clear in the minds of the employers; they are largely a matter of deduction from close-at-hand study of conditions secured by actual residence in a community. In such an inquiry as this these indirect results must at best be inferred from casual observation, conversation with residents and direct replies of employers; physical living conditions in particular being observable in the conditions of streets and alleys, courtyards, prevalence of gardens, and the surroundings in general.

Of the 213 different companies included in this investigation, 180, or 84.5 per cent, reported as to results obtained. Considering the 180 who replied to the inquiry, 175, or 97.2 per cent, reported the results on the whole as satisfactory both to the employee and to the company, while five companies, or 2.8 per cent of those reporting, declared the results to be unsatisfactory, or at least not positively satisfactory.

TABLE 131.—RESULTS OF EMPLOYERS' HOUSING IN THE UNITED STATES, BY INDUSTRY.

Industry.	Companies the result of whose housing work was—				Total.		Result of housing work reported as—				Total.	
	Reported.		Not reported.				Doubtful or unsatisfactory.		Satisfactory.			
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Bituminous-coal mining	58	90.6	6	9.4	64	100.0	2	3.4	56	96.6	58	100.0
Anthracite-coal mining	12	50.0	12	50.0	24	100.0	1	8.3	11	91.7	12	100.0
Iron mining	11	84.6	2	15.4	13	100.0			11	100.0	11	100.0
Copper mining	5	100.0			5	100.0	1	20.0	4	80.0	5	100.0
Other copper and gold mining	5	83.3	1	16.7	6	100.0			5	100.0	5	100.0
Iron and steel and allied industries	25	89.3	3	10.7	28	100.0			25	100.0	25	100.0
Manufacture of explosives	2	100.0			2	100.0			2	100.0	2	100.0
Textile manufacture	48	88.9	6	11.1	54	100.0	1	2.1	47	97.9	48	100.0
Miscellaneous industries	14	82.4	3	17.6	17	100.0			14	100.0	14	100.0
Total	180	84.5	33	15.5	213	100.0	5	2.8	175	97.2	180	100.0

It may, then, be positively stated that employers are almost unanimous in the opinion that housing is a beneficial factor in their work. As one or more favorable results were reported by each company, a total of 348 replies were received. These replies have been somewhat arbitrarily, but at the same time quite obviously, grouped under different heads by a simple process of paraphrasing the exact replies as given by the representatives of the different companies. The replies might be further consolidated so as to produce even fewer

heads, but this has not been done because it was desired to avoid interpretation as much as possible in the classification of replies from so many different sources. The list of replies here shown, therefore, involves a minimum of classification and interpretation.

Arranged in the order of the frequency with which certain results have been mentioned, we have the following for all industries combined:

1.	Secured better class of workmen	75
2.	Find greater stability in the labor force	47
3.	Secured necessary help	43
4.	Reduced number of floaters	42
5.	Secured better living conditions	32
6.	Secured greater loyalty and cooperation from labor	24
7.	Have more contented labor force	24
8.	Have more efficient labor force	19
9.	Better control of the labor situation	9
10.	Raised standard of living	8
11.	Married men attracted	6
12.	Greater regularity of employment	5
13.	Men supplied better houses for less money	4
14.	Profitable to company	3
15.	Very satisfactory	3
16.	Facilitated part time	2
17.	Value in advertising	1
18.	Control of drinking	1
	Total	348

An examination of these replies shows with only a few exceptions that the more general results were the more frequently stated, and that as the results get more specific the less frequently were they mentioned. This phenomenon is probably an indication that most employers had not had the question as to the results of their housing work raised to them before and were therefore relatively unprepared to answer. The natural consequence would be that only a vague and general reason would be given, while those who had given the matter consideration would be prepared to give a specific reply. The more specific replies are the more interesting and illuminating.

Some of the specific replies which were grouped under a general heading may be noted. Among the nine replies obviously grouped under "Better control of the labor situation" it was noted that company housing tends to decrease labor troubles and that it has made it possible to keep out labor agitators. Under a system where only company houses are available the employer is able to select the class and type of workman he desires. This facility, however, is limited by the existing state of the labor supply, and at the time this investigation was in progress there was, as some operators noted, a tendency to engage almost anyone who offered himself as a workman, because of a general shortage of help.

APPENDIX I.—LIST OF REFERENCES CONCERNING HOUSING BY EMPLOYERS IN THE UNITED STATES.

GENERAL REFERENCES.

The Aladdin Co. Aladdin plan of industrial housing. 1918. 88 p. illus. plans.

Allen, L. H. Home building for wage earners; a financial and economic problem. 1920. 56 p. illus. plans.

This book is published by Fred T. Ley & Co. (Inc.), general contractors, Springfield, Mass. The appendix consists of forms indicating the methods used by various employers in selling or renting to employees.

—— Industrial housing problems. 1917. 31 p. plates. plans.

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Bartlett, D. W. Better city. 1907. p. 194–197.
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Also builds homes for employees of his factory in Bessemer, Ala.
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Independent, May 27, 1909, v. 66: 1136–1137.
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Tolman, W. H. [Housing by the N. O. Nelson Company.]
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NESTLÉ FOOD CO., FULTON, N. Y.:
Stone & Leeming, Architects. Low priced and artistic homes.
Social service, Apr., 1903, v. 7: 82–85. illus.
NEW JERSEY ZINC CO., PALMERTON, PA.:
See PALMER LAND CO., PALMERTON, PA.
NEW YORK SHIPBUILDING CORPORATION, CAMDEN, N. J.:
Housing development for New York Shipbuilding Corporation, Camden, N. J.
American architect, June 5, 1918, v. 113. plan. plates.
No text. Not paged; opp. p. 764 and ff.
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Architectural forum, June, 1918, v. 28: 205–210. illus. plans.
NEWHOUSE MINES & SMELTERS CO.:
Tolman, W. H. Social engineering. 1909. p. 247–248.
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Hanger, G. W. W. Housing of the working people by employers.
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NIAGARA FALLS POWER CO., NIAGARA FALLS, N. Y.:
See NIAGARA DEVELOPMENT CO., NIAGARA FALLS, N. Y.
NORTON CO., WORCESTER, MASS.:
See INDIAN HILL CO., WORCESTER, MASS.
NORTON GRINDING CO., WORCESTER, MASS.:
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OLIVER IRON MINING CO., DULUTH, MINN.:
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Illustrations and brief description of miners' homes in Taconite, Minn., and Coleraine, Minn.
U. S. Steel Corporation. Bulletin. no. 4, Nov., 1913, p. 45, 46. illus. plan.
OLIVER-SNYDER CO., OLIVER, PA.:
Reynolds, Sim. A model plant in the coke region.
Coal age, Jan. 4, 1913, v. 3: 8–9. illus.
PALMER LAND CO., PALMERTON, PA.:
Hughes, Florence. Community life in an industrial village.
American city (Town and county ed.), May, 1915, v. 12: 395–399.
Palmerton, Pa. Citizens Cooperative Association. Palmerton, Carbon County, Pa. [1913] 20 p.
Stone & Leeming, Architects. Low-priced and artistic homes.
Social service, Apr., 1903, v. 7: 82–85. illus.
PEABODY COAL CO., KINCAID, ILL.:
Building an industrial town [Kincaid] in Illinois.
Engineering news, Jan. 8, 1914, v. 71: 89–90. plan.
Model mining town of Kincaid, Ill.
Engineering record, Dec. 6, 1913, v. 68: 639–640. map.
PEACEDALE MFG. CO., PEACEDALE, R. I.:
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept., 1904, p. 1221–1223, illus.
PELZER MFG. CO., PELZER, S. C.:
Ellis, L. B. Model factory town.
Forum, Sept., 1901, v. 32: 60–65.

PELZER MFG. CO., PELZER, S. C.—Concluded.
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept. 1904, p. 1224–1226, illus.
U. S. Bureau of labor. Bulletin. no. 31, 1900, p. 1151–1152.

PENNSYLVANIA CEMENT CO., BATH, PA.:
Two all-concrete house designs.
Coal age, June 29, 1918, v. 13: 1193–1194. illus. diagrs.
Two new designs of houses of concrete throughout.
Engineering news-record, May 16, 1918, v. 80: 947–948. illus. diagrs.

PENNSYLVANIA COAL & COKE CO.:
Houses of employees at the mines.
Mines and minerals, June, 1904, v. 24: 566–567. plans.

PHELPS, DODGE CORPORATION, TYRONE, N. MEX.:
Goodhue, B. G. The new mining community of Tyrone, N. M.
Architectural review, Apr., 1918, v. 6: 59–62. illus. plans.
Magnusson, Leifur. A modern copper mining town.
U. S. Bureau of labor statistics. Monthly labor review, Sept., 1918, v. 7: 278–284. illus. plans.

PITTSBURG-BUFFALO COAL CO., MARIANNA, PA.:
See UNION COAL & COKE CO., PITTSBURGH, PA.

PITTSBURGH CRUCIBLE STEEL CO., PITTSBURGH, PA.:
See MIDLAND IMPROVEMENT CO., MIDLAND, PA.

PITTSBURGH REDUCTION CO., MASSENA, N. Y.:
Workingmen's houses at Massena, N. Y.
Brickbuilder, Dec., 1916. v. 25: 331–333. illus. plans.
Houses to accommodate 105 families completed at average cost per single house of $2,076. Brief description of project. Over 2½ pages of illus. and plans.

PLYMOUTH CORDAGE CO., PLYMOUTH, MASS.:
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept., 1904, p. 1226–1234. illus. plans.
National civic federation. Annual report, 11th. 1911. p. 361–362.
National civic federation. Conference on welfare work. 1904. p. 7–9.
Tolman, W. H. [Housing by the Plymouth Cordage Co.]
In International housing congress, 9th, Vienna, 1910. Bericht, teil 1: 1083–1084.
—— Social engineering. 1909. p. 252–253.

POSTUM CEREAL CO., BATTLE CREEK, MICH.:
Tolman, W. H. [Housing by the Postum Cereal Co.]
In International housing congress, 9th, Vienna, 1910. Bericht, teil 1: 1087–1088.

PULLMAN CO., PULLMAN, ILL.:
Ashley, W. J. The railroad strike of 1894, the statements of the Pullman Company and the report of the Commission, together with an analysis of the issues. 1895. 100 p.
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"A full and exhaustive investigation of the economic experiment conducted by Pullman's Palace Car Company on the plan projected by Mr. George M. Pullman, the president."

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Cook, E. W. Betterment, individual, social, and industrial. 1906. p. 264–265, 268.
Ely, R. T. Pullman: a social study.
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Gilman, N. P. A dividend to labor. 1899. p. 239–244.
Gould, E. R. L. The housing of the working people.
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Taylor, G. R. Satellite cities. 1915. p. 28–67.
Also appeared in Survey, Nov. 2, 1912, v. 29: 117–131. illus.
U. S. Strike commission. Report on the Chicago strike. 1895. 681 p.
REMINGTON ARMS-UNION METALLIC CARTRIDGE CO., BRIDGEPORT, CONN.:
Bossom, A. C. The housing of employees.
Architectural forum, Aug., 1917, v. 27: 45–52. illus. plans.
The illustrations and plans are of Bridgeport houses.
Heating the homes of Remington City.
Metal worker, plumber and steam fitter. Jan. 5, 1917, v. 87: 37–38. illus. plans.
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Survey, Dec. 4, 1915, v. 35: 237–242. illus.
Tells of the problems to be met in providing homes, schools, and recreation for the hundreds of people brought to the town to make war supplies.
Remington Arms-Union Metallic Cartridge Company. A Remington guide to Bridgeport. n. d. p. 7, 8.
The Remington housing development.
Architectural forum, Aug., 1917, v. 27: 53–54. illus. plans.
Two views of Remington housing development at Bridgeport, Conn.
Architectural forum, Aug., 1917, v. 27: 44.
Illustrations only; no text.
REPUBLIC IRON & STEEL CO., YOUNGSTOWN, OHIO:
American iron and steel institute. Monthly bulletin, Sept., 1913, v. 1: 262–263.
Illustrations with short general description.
Wilcox, L. L. Mesabi company location.
Engineering and mining journal, Apr. 25, 1914, v. 97: 841–843. illus. plans.
RIVERSIDE & DAN RIVER COTTON MILLS, SCHOOLFIELD, VA.:
Home for women operatives to be erected by cotton mill company at Schoolfield, near Danville, Va.
Manufacturers record, Feb. 21, 1918, v. 73: 73. illus.
ROEBLING'S (J. A.) SONS CO., ROEBLING, N. J.:
International housing congress, 10th, The Hague, 1913. Rapports, pte. 3: 129.
Tolman, W. H. [Housing by Roebling's Sons.]
In International housing congress, 9th, Vienna, 1910. Bericht, teil 1: 1082–1083.
—— Social engineering. 1909. p. 346–347.
ROME BRASS & COPPER CO., ROME, N. Y.:
Standard buildings, Inc., N. Y. Riverdale; a village for the employees of the Rome Brass & Copper Co., Rome, N. Y. 1916. 20 p. illus. plans.
Contains prospectus of this town in English, Hungarian, Italian, and Polish.

SACO-LOWELL SHOPS, BOSTON, MASS.:
Banfield, S. M. Better homes to make better workmen: hotel for employees of Saco-Lowell shops.
Industrial engineering, June, 1914, v. 14: 221–223. illus.
U. S. Bureau of foreign and domestic commerce. The cotton-spinning machinery industry. 1916. p. 71–72.
SCOVILLE MANUFACTURING CO., WATERBURY, CONN.:
Nolen, John. Low cost houses for employees.
American industries, Nov., 1916, v. 17: 13–17. diagrs.
SOUTHERN ALUMINUM CO., BADIN, N. C.:
Factory city beautiful at low cost, Badin, N. C.
Iron age, Apr. 8, 1915, v. 95: 782–786. illus. plans.
STEARNS COAL CO. (LTD.), STEARNS, KY.:
Kentucky before and after development of mines.
Coal age, May 27, 1916, v. 9: 936–937. illus.
Illustrations, with brief description.
STETSON (JOHN B.) CO, PHILADELPHIA, PA.:
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept., 1904. p. 1234–1239. illus.
STONEGA COAL & COKE CO.:
Prehn, Martin. The Stonega Coal and Coke Co.'s operations in Virginia.
Coal age, Apr. 3, 1915, v. 7: 598–599. illus.
SUPERIOR & BOSTON CO.:
The Superior and Boston mine.
Mines and minerals, Sept., 1910, v. 31: 112–116. illus. plans.
No text.
TALBOT MILLS, N. BILLERICA, MASS.:
Talbot Mills.
Pamphlet issued by the company.
TENNESSEE COAL, IRON & R. R. CO., BIRMINGHAM, ALA.:
American iron and steel institute. Monthly bulletin, Mar., 1913, v. 1: 87–89; Sept., 1913, v. 1: 236–237. illus.
[Fairfield, Ala.] (*In* Taylor, G. R. Birmingham's civic front.)
Survey, Jan. 6, 1912, v. 27: 1467–1468.
Fairfield, Alabama, the South's model industrial city.
Iron tradesman, Feb., 1915, v. 73: 1–5.
Housing the employee; pictures.
System, Oct. 1914, v. 26: 433–435.
Illustrations only.
International housing congress, 10th, The Hague, 1913. Rapports, pte. 3: 130–133.
Miller, G. H. Fairfield, a town with a purpose.
American city, Sept., 1913, v. 9: 213–219. illus. plans.
Survey, Jan. 6, 1912, v. 27: 1467, 1535, 1539. illus.
Taylor, G. R. Satellite cities. 1915. p. 236–258.
U. S. Steel corporation. Bulletin. no. 4, Nov., 1913, p. 33–36, 43–44. illus. plan.
See also TENNESSEE LAND CO., FAIRFIELD, ALA.
TENNESSEE LAND CO., FAIRFIELD, ALA.:
Fairfield, Alabama, the South's model industrial city.
Iron tradesman, Feb., 1915, v. 73: 1–5. illus.
Miller, G. H. Fairfield, a town with a purpose.
American city, Sept., 1913, v. 9: 213–219. illus. plans.

TENNESSEE LAND CO., FAIRFIELD, ALA.—Concluded.
Stark, C. J. Steel corporation's industrial community development.
Iron trade review, Jan. 1, 1914, v. 54: 74–83. illus. plans.
Reprinted as a separate by the Iron trade review under the title Industrial community development with particular reference to creation of Fairfield, Ala. illus. plans.
Survey, Jan. 6, 1912, v. 27: 1467–1468; June 7, 1913, v. 30: 341. illus.
The latter reference contains a plan of the town.
Taylor, G. R. Satellite cities. 1915. p. 237–258.
See also TENNESSEE COAL, IRON & RAILROAD CO., BIRMINGHAM, ALA.
UNION COAL AND COKE CO., PITTSBURGH, PA.:
Pittsburg–Buffalo company. 1911. 203 p. illus. map. tables. diagrs.
Contains plans and illustrations, but no description. Probably unavailable at present, as company has been dissolved.
UNION METALLIC CARTRIDGE CO., BRIDGEPORT, CONN.:
See REMINGTON ARMS–UNION METALLIC CARTRIDGE CO., BRIDGEPORT, CONN.
UNITED SHOE MACHINERY CO., BEVERLY, MASS.:
Story of three partners. n. d. 50 p. illus.
Pamphlet issued by the company.
U. S. COAL & COKE CO., GARY, W. VA.:
Housing coal miners.
Coal age, July 24, 1915. v. 8: 137–138.
Price, W. Z. Steel corporation mines at Gary [W. Va.].
Colliery, Mar., 1914, v. 34: 471. illus.
Type of company houses.
Coal age, Sept. 22, 1917, v. 12: 502.
An illustration; no text.
U. S. COAL & OIL CO.:
A description of the Island Creek mines of the U. S. Coal & Oil Co., Holden, Logan Co., W. Va. [1906] [24] p.
Lyman, R. H. Coal mining at Holden, W. Va.
Engineering and mining journal, Dec. 22, 1906, v. 82: 1170–1173. illus.
U. S. STEEL CORPORATION:
See AMERICAN IMPROVEMENT CO., CARNEGIE LAND CO., GARY LAND CO., MORGAN PARK CO., OLIVER IRON MINING CO., TENN. COAL, IRON & R. R. CO., TENN. LAND CO., VANDERGRIFT LAND & IMPROVEMENT CO.
UNIVERSAL PORTLAND CEMENT CO.:
See GARY LAND CO., GARY, IND.; MORGAN PARK CO., DULUTH, MINN.
VANDERGRIFT LAND & IMPROVEMENT CO., VANDERGRIFT, PA.:
Goodnow, M. N. Concrete houses versus tenements: model dwellings for workingmen.
Scientific American, Oct. 19, 1912, v. 107: 324–325. illus.
Sheet metal center a model municipality; Vandergrift, Pa.
Metal worker, June 26, 1914, v. 81: 896–900. illus.
Vandergrift Land Co. Vandergrift—its homes and industries. 1900. 3 p. plates.
Plates with descriptive text.
VISCOSE CO., MARCUS HOOK, PA.:
An industrial village. n. d. 19 p. illus. plans.
Industrial village at Marcus Hook, Pa.
Brickbuilder, Dec., 1916, v. 25: 329–330. illus. plans.

VISCOSE CO., MARCUS HOOK, PA.—Concluded.
Tarbell, I. M. Good homes make good workers.
In her New ideals in business. 1916. p. 146–155.
Viscose Co. Discussion on garden cities.
Pamphlet by the company.
WALTHAM WATCH CO., WALTHAM, MASS.:
See AMERICAN WALTHAM WATCH CO., WALTHAM, MASS.
WAR EAGLE COAL CO., WAR EAGLE, W. VA.:
Ready-made miners' houses in West Virginia.
Coal age, Feb. 19, 1916, v. 9: 332. illus.
This company has stopped building houses with open grates. Now puts up ready-cut houses.
WARREN (S. D.) & CO., CUMBERLAND MILLS, ME.:
Gould, E. R. L. The housing of the working people.
In U. S. Bureau of labor. Eighth special report of the Commissioner of labor. 1895. p. 321–324. plans. table.
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept., 1904, p. 1239–1241. illus. plan.
WESTINGHOUSE AIRBRAKE CO., WILMERDING, PA.:
Ford, F. G. Improved housing for wage earners.
Social service, Apr., 1903, v. 7: 85–90.
Hanger, G. W. W. Housing of the working people by employers.
In U. S. Bureau of labor. Bulletin. no. 54, Sept., 1904, p. 1241–1243. illus. plans.
Jacobsen, E. B. Housing and the foreign born in Wilmerding. n. d. 8 p.
National civic federation. Conference on welfare work. 1904. p. 49–50.
Social service, Apr., 1903, v. 7: 88–90. illus.
Tolman, W. H. [Housing by the Westinghouse Airbrake Co.]
In International housing congress, 9th, Vienna, 1910. Bericht, teil: 1, 1076–1077.
—— Industrial betterment. [1900] p. 56–58.
U. S. Bureau of labor statistics. Bulletin. no. 123, 1913, p. 20–21.
WHITIN MACHINE WORKS, WHITINSVILLE, MASS.:
U. S. Bureau of foreign and domestic commerce. The cotton-spinning machinery industry. 1916. p. 70–71.
WILLIMANTIC LINEN CO., WILLIMANTIC, CONN.:
Bliss, W. D. P. ed. Encyclopedia of social reform. 1908. p. 774.
Gilman, N. P. A dividend to labor. 1899. p. 258–262.
Gould, E. R. L. The housing of the working people.
In U. S. Bureau of labor. Eighth special report of the Commissioner of labor. 1895. p. 327–328. illus. plans.
Meakin, Budgett. Model factories. 1905. p. 400–401.
WISCONSIN STEEL CO., BENHAM, KY.:
Coal trade bulletin, May 1, 1914, v. 30: 47–48. illus.
WITHERBEE-SHERMAN MINING CO., MINEVILLE, N. Y.:
American iron and steel institute. Monthly bulletin, Sept., 1913, v. 1: 246–247.
Lefevre, S. Housing and sanitation at Mineville.
American institute of mining engineers. Bulletin, Feb., 1915, no. 98, p. 227–238. illus. diagrs. plans.
Also published as a pamphlet by the company.
YOUNGSTOWN SHEET & TUBE CO., YOUNGSTOWN, OHIO:
See BUCKEYE LAND CO., YOUNGSTOWN, OHIO.
ZEIGLER COAL CO., ZEIGLER, ILL.:
Parsons, F. W. A modern coal-mining town.
Engineering and mining journal, Nov. 3, 1906, v. 82: 830–832. illus.

APPENDIX II.—LIST OF REPRESENTATIVE COMPANIES CONDUCTING HOUSING OF EMPLOYEES.

MINING COMPANIES.

[Almost all mine operators of every kind find it necessary to house all or part of their employees. A complete list of those who do housing would therefore be a catalogue of practically all the mining establishments in the United States; but, this being impracticable, only a very brief selected list of operators has been given.]

BERWIND WHITE COAL MINING Co., Windber, Pa.

BROOKE (E. & G.) IRON Co. *See* Brooke (E. & G.) Land Co., Birdsboro, Pa.

BROOKE (E. & G.) LAND Co., Birdsboro, Pa.

BURRO MOUNTAIN COPPER Co., Tyrone, N. Mex.

CALUMET & HECLA MINING Co., Calumet, Mich.

Subsidiary companies:

AHMEEK; ALLOUEZ; CENTENNIAL; CLIFF; GRATIOT; ISLE ROYALE; LA SALLE; LAKE SUPERIOR SMELTING; LAURIUM; OSCEOLA; SUPERIOR; TAMARACK; WHITE PINE COAL.

CLEARFIELD BITUMINOUS COAL CORPORATION, Clearfield, Pa.

CLEVELAND-CLIFFS IRON Co., Ishpeming, Mich.

COLORADO FUEL & IRON Co., Denver, Colo.

CONEMAUGH SMOKELESS COAL Co., Robindale, Pa.

CONSOLIDATION COAL Co., Jenkins, Ky.; Van Lear, Ky.; Somerset, Pa.; Fairmont, W. Va.

COPPER QUEEN CONSOLIDATED MINING Co., Bisbee, Ariz.

COPPER RANGE Co., Painesdale, Mich.

DELAWARE, LACKAWANNA & WESTERN R. R. Co., Scranton, Pa.

DODSON COAL Co., Enola, Pa.; Morea, Pa.; Shenandoah, Pa.

ELLSWORTH COLLIERIES Co., Ellsworth, Pa.

FRICK (H. C.) COKE Co., Pittsburgh, Pa.

LEHIGH & WILKES-BARRE COAL Co., Wilkes-Barre, Pa.

MADISON COAL CORPORATION, Dewmaine, Ill.; Glen Carbon, Ill.

MIAMI COPPER Co., Miami, Ariz.

NEW JERSEY ZINC Co. (of Pennsylvania), Franklin, N. J.

See Palmer Land Co., Palmerton, Pa.

OLIVER IRON MINING Co., Duluth, Minn.

PALMER LAND Co., Palmerton, Pa.

Subsidiary housing company for the mines and plant of the New Jersey Zinc Co. of Pennsylvania, located at Palmerton, Pa., which latter company is owned by the New Jersey Zinc Co., New York City.

PENN MARY COAL Co., Heilwood, Pa.

PHILADELPHIA & READING COAL & IRON Co., Pottsville, Pa.

PROVIDENT COAL Co., St. Clairsville, Ohio.

RAINEY (W. J.), Uniontown, Pa.

RAY CONSOLIDATED COPPER Co., Ray, Ariz.

REPUBLIC IRON & STEEL Co., Youngstown, Ohio.

STINEMAN COAL & COKE Co., South Fork, Pa.

TENNESSEE COAL, IRON & R. R. Co., Birmingham, Ala.

See also TENNESSEE LAND Co., Fairfield, Ala.

TENNESSEE LAND CO., Fairfield, Ala.
Subsidiary of the U. S. Steel Corporation, conducts housing for the following subsidiaries of the latter located at Birmingham, Ala., and Fairfield, Ala., namely: Iron and steel works departments of the Tennessee Coal, Iron & R. R. Co., and the American Steel & Wire Co., Fairfield, Ala.
See also TENNESSEE COAL, IRON & R. R. CO., Birmingham, Ala.
U. S. COAL & COKE CO., Gary, W. Va.
VESTA COAL CO., California, Pa.
WITHERBEE-SHERMAN & CO., Mineville, N. Y.

MANUFACTURING COMPANIES.

ABBEVILLE COTTON MILLS, Abbeville, S. C.
ACME FOUNDRY CO., Cleveland, Ohio.
AETNA CHEMICAL CO. OF MAINE. *See* AETNA EXPLOSIVES CO. (INC.), New York City.
AETNA EXPLOSIVES CO. (INC.), New York City.
AIKEN MANUFACTURING CO., Bath, S. C.
ALABAMA CO., Lewisburg, Ala.
ALBANY CAR WHEEL CO., Albany, N. Y.
ALLENTOWN WOOLEN CO., Allentown, R. I.
ALPHA PORTLAND CEMENT CO., Manheim, W. Va.
ALUMINUM CO. OF AMERICA, Massena, N. Y.
AMERICAN BRAKE SHOE & FOUNDRY CO., Erie, Pa.
See also AMERICAN LAND & IMPROVEMENT CO., West Mahwah, N. J.
AMERICAN BRASS CO., Waterbury, Conn.
AMERICAN BRIDGE CO. *See* AMERICAN IMPROVEMENT CO., Ambridge, Pa.; GARY LAND CO., Gary, Ind.
AMERICAN CAR & FOUNDRY CO., Berwick, Pa.
AMERICAN CAR & STEEL CO. *See* AMERICAN CAR & FOUNDRY CO., Berwick, Pa.
AMERICAN CAST IRON PIPE CO., Acipco, Ala.
AMERICAN CEMENT PLASTER CO., Lawrence, Kans.
AMERICAN HARD RUBBER CO., New York City, N. Y.
AMERICAN IMPROVEMENT CO., Ambridge, Pa.
Housing company for plants of the American Bridge Co., located at Ambridge, Pa. The latter company is a subsidiary of the U. S. Steel Corporation.
AMERICAN LAND & IMPROVEMENT CO., West Mahwah, N. J.
Subsidiary housing company of the American Brake Shoe & Foundry Co. Plants at West Mahwah, N. J.
AMERICAN METAL CO. (LTD.), New York City.
AMERICAN REFRACTORIES CO., Chicago, Ill.
AMERICAN ROLLING MILL CO., Middletown, Ohio.
AMERICAN SEWER PIPE CO., Akron, Ohio.
AMERICAN SHEET & TIN PLATE CO. *See* CARNEGIE LAND CO., Munhall, Pa.; GARY LAND CO., Gary, Ind.; VANDERGRIFT LAND & IMPROVEMENT CO., Vandergrift, Pa.
AMERICAN SHEET STEEL CO., Vandergrift, Pa.
AMERICAN SMELTING & REFINING CO., Hayden, Ariz.; Cokedale, Colo.; El Paso, Tex.; Garfield, Utah.
AMERICAN STEEL & WIRE CO., Donora, Pa.
See also CARNEGIE LAND CO., Munhall, Pa.; GARY LAND CO., Gary, Ind.; TENNESSEE LAND CO., Fairfield, Ala.
AMERICAN THREAD CO., New York City.
AMERICAN VISCOSE CO. *See* VISCOSE CO., Marcus Hook, Pa.

AMERICAN WALTHAM WATCH Co., Waltham, Mass.
AMERICAN WOOLEN Co., Boston, Mass.
AMERICAN ZINC & CHEMICAL Co. *See* AMERICAN METAL Co. (LTD.), New York City.
AMERICAN ZINC, LEAD & STEEL Co., Carterville, Mo.
AMOSKEAG MANUFACTURING Co., Manchester, N. H.
ANDERSON COTTON MILLS, Anderson, S. C.
ANNISTON MANUFACTURING Co., Anniston, Ala.
ARCHAMBEAULT (GEO. N.), Pascoag, R. I.
ARCTIC MILL, Arctic, R. I.
ASHAWAY WOOLEN Co., Ashaway, R. I.
ASHTON MILL, Ashton, R. I.
ATLANTIC MILLS (INC.), Olneyville, R. I.
ATLAS POWDER Co., Wilmington, Del.
AUGUSTA FACTORY, Augusta, Ga.
AUSTIN AUTOMOBILE Co., Grand Rapids, Mich.
BAKER CHOCOLATE Co., Attleboro, R. I.
BALDWIN LOCOMOTIVE WORKS, Eddystone, Pa.
BANCROFT (JOSEPH) & SONS, Wilmington, Del.
BANTAM BALL BEARING Co., Bantam, Conn.
BARNES-KING DEVELOPMENT Co., Marysville, Mont.; Kendall, Wyo.
BARRE WOOL COMBING Co., Barre, Mass.
BEACON FALLS RUBBER Co., Beacon Falls, Conn.
BEECH-NUT PACKING Co., Canajoharie, N. Y.
BELDING BROS. & Co., Belding, Mich.
BENN (JOSEPH) & SONS, Greystone, R. I.
BERKELEY Co., Berkeley, R. I.
BERNON MILLS, Georgiaville, R. I.
BETHLEHEM STEEL Co., Sparrows Point, Md.; Bethlehem, Pa.; Steelton, Pa.
BIBB MANUFACTURING Co., Porterdale, Ga.
BICKFORD MACHINE Co., Greenfield, Mass.
BIRD & SON, East Walpole, Mass.
BIRDSBORO STEEL FOUNDRY & MACHINE Co. *See* BROOKE (E. & G.) LAND Co., Birdsboro, Pa.
BLOEDEL-DONOVAN LUMBER MILLS, Bellingham, Wash.
BORDEN MANUFACTURING Co., Goldsboro, N. C.
BOSTON MANUFACTURING Co., Waltham, Mass.
BOSTON WOOLEN HOSE & RUBBER Co., Cambridge, Mass.
BRADFORD DYEING ASSOCIATION, Bradford, R. I.
BRANDON MILLS, Greenville, S. C.
BRIARCLIFF FARMS, Briarcliff Manor, N. Y.
BRIER HILL STEEL Co., Youngstown, Ohio.
BRIGHTON MILLS, Allwood, N. J.; Passaic, N. J.
BRISTOL BRASS Co., Bristol, Conn.
BROOKSIDE MILLS, Knoxville, Tenn.
BRUNSWICK-BALKE-COLLENDER Co., Chicago, Ill.
BUCKEYE LAND Co., Youngstown, Ohio.
Subsidiary housing company for the Youngstown Sheet & Tube Co.
BUICK MOTOR Co., Flint, Mich.
BUNKER HILL & SULLIVAN Co., Kellogg, Idaho.
BUSH LAND Co. *See* BUSH TERMINAL BUILDINGS Co., New York City.
BUSH TERMINAL BUILDINGS Co., New York City.
CABARRUS COTTON MILLS, Concord, N. C.
CALIFORNIA & HAWAIIAN SUGAR REFINING Co., San Francisco, Calif.
CALIFORNIA PACKING ASSOCIATION, San Francisco, Calif.

CAMBRIA STEEL Co., Philadelphia, Pa.
CARNEGIE LAND Co., Pittsburgh, Pa.
Subsidiary of the United States Steel Corporation; conducts housing work for the following subsidiaries of the latter: American Steel & Wire Co.; American Sheet & Tin Plate Co., and Carnegie Steel Co., which have plants in the vicinity of Pittsburgh—e. g., at Homestead, Clairton, Farrell, and Munhall, Pa.
CARNEGIE STEEL Co., Pittsburgh, Pa.
See CARNEGIE LAND Co., Pittsburgh, Pa.
CAROLINA MILLS, Carolina, R. I.
CASPARIS STONE Co., Columbus, Ohio.
CENTRAL ILLINOIS PUBLIC SERVICE Co., Kincaid, Ill.
CENTREDALE WORSTED MILLS, Centredale, R. I.
CHADWICK-HASKINS Co., Charlotte, N. C.
CHASE METAL WORKS, Waterbury, Conn.
CHATTANOOGA RY. Co., Chattanooga, Tenn.
CHENEY BROS. SILK MILLS, South Manchester, Conn.
CINCLARE CENTRAL FACTORY, Cinclare, La.
CLAPP (E. H.) RUBBER Co., Hanover, Mass.
CLARK THREAD Co., Newark, N. J.
CLAY PRODUCTS Co., Brazil, Ind.
CLEVELAND CRANE & ENGINEERING Co., Wickliffe, Ohio.
COLUMBIA CHEMICAL Co., Barberton, Ohio.
COLUMBIA PLATE GLASS Co., Blairsville, Pa.
COLUMBIA STEEL Co., Pittsburg, Calif.
COLUMBUS MANUFACTURING Co., Columbus, Ga.
CONNECTICUT MILLS Co., Danielson, Conn.
CONSOLIDATED GAS, ELECTRIC LIGHT & POWER Co., Baltimore, Md.
CORNELL (J. B. & J. M.) Co., Cold Spring, N. Y.
CORONET WORSTED Co., Mapleville, R. I.
COVENTRY Co., Anthony, R. I.
CRADDOCK TERRY Co., Lynchburg, Va.
CRANSTON BOX MFG. Co., Cranston, R. I.
CRANSTON PRINT WORKS, Cranston, R. I.
CRANSTON WORSTED MILLS, Bristol, R. I.
CROMPTON Co., Crompton, R. I.
CROSSETT LUMBER Co., Crossett, Ark.
CROSSETT WESTERN LUMBER Co., Wauna, Oreg.
CRUCIBLE STEEL Co. OF AMERICA, Pittsburgh, Pa.
CUDAHY REFINING Co. *See* SINCLAIR REFINING Co., Chicago, Ill.
CUMBERLAND MILLS, Westbrook, Me.
DALLAS MFG. Co., Huntsville, Ala.
DAN RIVER COTTON MILLS. *See* RIVERSIDE & DAN RIVER COTTON MILLS, Schoolfield, Va.
DAVISVILLE WOOLEN Co., Davisville, R. I.
DENNISON MFG. Co., Framingham, Mass.
DEVLIN (THOMAS) MFG. Co., Philadelphia, Pa.
DIAMOND MATCH Co., Chico, Calif.
DODGE BROS., Detroit, Mich.
DILLON'S (E.) SONS. (INC.), Indian Rock, Va.
DOW CHEMICAL Co., Midland, Mich.; Mount Pleasant, Mich.
DRAPER Co., Hopedale, Mass.
DULUTH, MISSABE & NORTHERN R. R., Proctor, Minn.
DU PONT DE NEMOURS POWDER Co., Carneys Point, N. J.; Hopewell, Va.
DWIGHT MANUFACTURING Co., Alabama City, Ala.

EAGLE & PHOENIX MILLS, Columbus, Ga.
EAGLE LOCK Co., Terryville, Conn.
EAGLE MILLS, Woonsocket, R. I.
EASTERN STEEL Co., Pottsville, Pa.
ECLIPSE HOME MAKERS (INC.), Beloit, Wis.
EDISON ELECTRIC Co., Los Angeles, Calif.
ELBERTON MANUFACTURING Co., Elberton, Ga.
ELGIN WATCH Co., Elgin, Ill.
ELIZABETH MILLS, East Greenwich, R. I.
EMPIRE STEEL & IRON Co., Oxford, N. J.
ENDICOTT JOHNSON & Co., Endicott, N. Y.; Johnson City, Tenn.
ENTERPRISE MANUFACTURING Co., Augusta, Ga.
ENTWISTLE MANUFACTURING Co., Rockingham, N. C.
ERIE FORGE Co., Erie, Pa.
ERWIN COTTON MILLS Co., West Durham, N. C.
ESMOND MILLS, Esmond, R. I.
FAIRBANKS (E. & T.) & Co., St. Johnsbury, Vt.
FAIRBANKS MORSE Co. *See* ECLIPSE HOME MAKERS (INC.), Beloit, Wis.
FALES & JENCKS, Pawtucket, R. I.
FALLS RIVET & MACHINERY Co., Kent, Ohio.
FEDERAL REFRACTORIES Co., Alexandria, Pa.
FIRESTONE TIRE & RUBBER Co., Akron, Ohio.
FORBES LITHOGRAPHIC Co., Forbes, Mass.
FORESTDALE MANUFACTURING Co., Forestdale, R. I.
FOURCHE RIVER LUMBER Co., Bigelow, Ark.
FULTON BAG COTTON MILLS, Atlanta, Ga.
G. G. G. METAL STAMPING Co., Warren, Pa.
GAINESVILLE COTTON MILL, Gainesville, Ga.
GALLOWAY (WM.) Co., Waterloo, Iowa.
GARLOCH-FRAZEE LAUNDRY Co., Cleveland, Ohio.
GARY LAND Co., Gary, Ind.
Subsidiary of the U. S. Steel Corporation; conducts housing work for the following subsidiaries of the latter located at Gary, Ind.: American Sheet & Tin Plate Co.; American Bridge Co.; Gary Heat, Light & Power Co.; Illinois Steel Co.; Elgin, Joliet & Eastern Ry.; and Universal Portland Cement Co.
GENERAL CHEMICAL Co., Wilmington, Del.; Marcus Hook, Pa.; Pulaski, Va.
GENERAL ELECTRIC Co. *See* LAWRENCE PARK REALTY Co., Erie, Pa.
GENERAL FIREPROOFING Co., Youngstown, Ohio.
GENERAL REFRACTORIES Co., Chester, Pa.
GLENDALE ELASTIC FABRIC Co., Easthampton, Mass.
GLENDALE MILLS, Spartanburg, S. C.
GLENGARY MILL (INC.), Whipple, R. I.
GLENLYON DYE WORKS, Saylesville, R. I.
GOFF (D.) & SONS, Pawtucket, R. I.
GOODRICH (B. F.) Co., Akron, Ohio.
GOODYEAR COTTON MILLS, Killingly, Conn.
GOODYEAR HEIGHTS REALTY Co., Akron, Ohio.
Subsidiary housing company of the Goodyear Tire & Rubber Co., Akron, Ohio.
GOODYEAR TIRE & RUBBER Co., Akron, Ohio. *See* GOODYEAR HEIGHTS REALTY Co., Akron, Ohio.
GRANITEVILLE MFG. Co., Graniteville, S. C.
GREENE & DANIELS Co., INC., Pawtucket, R. I.
GREENWICH BLEACHERY, East Greenwich, R. I.
GREENWOOD COTTON MILL, Greenwood, S. C.

GRONDEL COTTON MILLS, Greenwood, S. C.
GROSVENOR-DALE CO., North Grosvenor Dale, Conn.
HAMILTON WEB CO., Hamilton, R. I.
HANES (P. H.) KNITTING CO., Hanes, N. C.
HANNAH PICKET MILLS, Rockingham, N. C.
HARRISON-WALKER REFRACTORIES CO., Pittsburgh, Pa.
HART-PARR CO., Charles City, Iowa.
HENDERSON COTTON MILLS, Henderson, Ky
HERCULES POWDER CO., Wilmington, Del.
HERSHEY CHOCOLATE CO., Hershey, Pa.
HIETT (IRVING B.) CO., Toledo, Ohio.
HILLSIDE COTTON MILLS, La Grange, Ga.
HOCHSCHILD, KOHN & CO., Baltimore, Md.
HOMER LAUGHLIN CHINA CO., Newell, W. Va.
HOPE WEBBING CO., Providence, R. I.
HORLICK MALTED MILK CO., Racine, Wis.
HOWARTH (ANDREW) & SONS, Leicester, Mass.
HOWLAND MILLS CORPORATION, New Bedford, Mass.
ILLINOIS STEEL CO. *See* GARY LAND CO., Gary, Ind.
IMPERIAL PRINTING & FINISHING CO., Bellefonte, R. I.
INDIAN HEAD MILLS, Cordova, Ala.
INDIAN HILL CO., Worcester, Mass.
Subsidiary of the Norton Co., which conducts the housing work for the Norton Co. and the Norton Grinding Co., Worcester, Mass.
INDIANA STEEL CO. *See* GARY LAND CO., Gary, Ind.
INLAND STEEL CO., Indiana Harbor, Ind.; Crosby, Minn.
INTERLAKEN MILLS, Arkwright, R. I.; Harris, R. I.
INTERNATIONAL COTTON MILLS CORPORATION, Boston, Mass.
INTERNATIONAL SHIP BUILDING CO., Pascagoula, Miss.
JACKSON FIBER CO., Bemis, Tenn.
JENCKES SPINNING CO., Pawtucket, R. I.
JONES & LAUGHLIN STEEL CO. *See* WOODLAWN LAND CO., Woodlawn, Pa.
JOSLIN MFG. CO., Richmond, R. I.
JUILLIARD (A. D.) & CO., New York City.
KAUL LUMBER CO., Kaulton, Ala.
KELLEY ISLAND LIME & TRANSPORTATION CO., Cleveland, Ohio.
KEMMERER (M. S.) & CO., Sandy Run, Pa.
KENT MANUFACTURING CO., Centreville, R. I.
KIMBERLY CLARK PAPER MILLS, Kimberly, Wis.
KING (JOHN P.) MFG. CO., Augusta, Ga.
KING PHILLIP MILLS, Fall River, Mass.
KNOWLES, TAYLOR & KNOWLES, East Liverpool, Ohio.
KNOXVILLE COTTON MILLS, Knoxville, Tenn.
KOHLER CO., Kohler, Wis.
KOPPEL LAND CO., Koppel, Pa.
Subsidiary housing company of the Orenstein-Arthur Koppel Co., Koppel, Pa.
LACKAWANNA IRON & STEEL CO. *See* LACKAWANNA STEEL CO., Lackawanna, N. Y.
LACKAWANNA STEEL CO., Lackawanna, N. Y.
LANGLY MANUFACTURING CO., Langly, S. C.
LARKIN CO., Buffalo, N. Y.
LAWRENCE MANUFACTURING CO., Lowell, Mass.
LAWRENCE PARK REALTY CO., Lawrence Park, Pa.
Housing company for the General Electric Co., Erie, Pa.
LAWTON COTTON MILLS CORPORATION, Plainfield, Conn.

LEAK, WALL AND MCRAE, Rockingham, N. C.
LERCH BROTHERS, Baltimore, Md.
LIBBY, MCNEIL & LIBBY, Chicago, Ill.
LINEN THREAD Co., New York City.
LIPPITT WOOLEN Co., Woonsocket, R. I.
LISK MANUFACTURING Co., Canandaigua, N. Y.
LIVINGSTONE WORSTED Co., Washington, R. I.
LOCUSTVILLE WOOLEN Co., Hope Valley, R. I.
LODGE & SHIPLEY MACHINE TOOL Co., Cincinnati, Ohio.
LONSDALE Co., Lonsdale, R. I.
LORAY MILLS, Gastonia, N. C.
LORRAINE MANUFACTURING Co., Pawtucket, R. I.
LOWNEY (WALTER M.) Co., Boston, Mass.
LUDLOW MANUFACTURING ASSOCIATES, Ludlow, Mass.
LUDLUM STEEL Co., Watervliet, N. Y.
LYMANSVILLE Co., Lymansville, R. I.
LYNCHBURG COTTON MILL, Lynchburg, Va.
LYNCHBURG TRACTION & LIGHT Co., Lynchburg, Va.
LYNDORA LAND & IMPROVEMENT Co., Lyndora, Pa.
Subsidiary housing company for the Standard Steel Car Co. plants at Lyndora, Pa. and Hammond, Ind.
MADEIRA HILL Co., Pottsville, Pa.
MANHASSETT MANUFACTURING Co., Providence, R. I.
MANUFACTURERS' LIGHT & HEAT Co., Pittsburgh, Pa.
MANVILLE Co., Manville, R. I.
MARK MANUFACTURING Co. *See* SHEET AND TUBE Co. OF AMERICA, Indiana Harbor, Ind.
MASSACHUSETTS MILLS, Lindale, Ga.
MAXWELL MOTOR Co., Newcastle, Ind.
MERCHANTS' SHIPBUILDING CORPORATION, Bristol, Pa.
MERRIMACK MANUFACTURING Co., Huntsville, Ala.; Lowell, Mass.
MICHELIN TIRE Co., Milltown, N. J.
MICHIGAN TANNING & EXTRACT Co., Petoskey, Mich.
MIDLAND IMPROVEMENT Co., Midland, Pa.
Subsidiary of the Crucible Steel Co. of America; conducts the housing work of the Pittsburgh Crucible Steel Co., Pittsburgh, Pa., which is controlled by the former through stock ownership.
MIDLAND STEEL Co. *See* MIDLAND IMPROVEMENT Co., Midland, Pa.
MIDVALE STEEL & ORDNANCE Co., New York City.
MILES TILE MANUFACTURING Co., Los Angeles, Calif.
MILSTEAD MANUFACTURING Co., Milstead, Ga.
MINNESOTA STEEL Co. *See* MORGAN PARK Co., Duluth, Minn.
MOLLOHAN MANUFACTURING Co., Newberry, S. C.
MONAGHAN MILLS, Greenville, S. C.
MORGAN ENGINEERING Co., Alliance, Ohio.
MORGAN PARK Co., Duluth, Minn.
Subsidiary of the U. S. Steel Corporation; conducts housing for the following subsidiaries of the latter located at Duluth, Minn.: Duluth, Missabe & Northern R. R.; Minnesota Steel Co., and the Universal Portland Cement Co.
MORRIS & Co., Baltimore, Md.
MOUNT UNION REFRACTORIES Co., Kistler, Pa.; Mount Union, Pa.
MOWRY (H. E. & E. A.), Farkiln, R. I.
MYSTIC WOOLEN MILLS, Hope Valley, R. I.
NATICK MILL, Natick, R. I.

National Acme Co., Cleveland, Ohio.
National Cash Register Co., Dayton, Ohio.
National Tube Co., New York City.
Naumkeag Steam Cotton Co., Salem, Mass.
Nelson (N. O.) Co., Leclaire, Ill.
Nelson Valve Co., Wyndmore, Pa.
Nestlé Food Co., Fulton, N. Y.
New Departure Manufacturing Co., Bristol, Conn.
New York Edison Co., New York City.
New York Shipbuilding Corporation, Camden, N. J.
Newberry Cotton Mill, Newberry, S. C.
Newport News Shipbuilding Co., Newport News, Va.
Niagara Development Co., Niagara Falls, N. Y.
Niagara Falls Power Co. *See* Niagara Development Co., Niagara Falls, N. Y.
Niantic Manufacturing Co., East Lynn, Conn.
North American Lace Co., South Langhorne, Pa.
Norton Co. *See* Indian Hill Co., Worcester, Mass.
Norton Grinding Co. *See* Indian Hill Co., Worcester, Mass.
Oakland Worsted Co., Oakland, R. I.
Oil Well Supply Co., Pittsburgh, Pa.
Oliver-Snyder Co., Oliver, Pa.
Olympia Cotton Mills, Columbia, S. C.
Oneida Community (Ltd.), Oneida, N. Y.
Orenstein-Arthur Koppel Co. *See* Koppel Land Co., Koppel, Pa.
Orr Cotton Mill, Anderson, S. C.
Orrell Mills, Glendale, R. I.
Osborne (F. E.) & Co., Derby, Conn.
Pacific Mills, Lawrence, Mass.
Pacolet Manufacturing Co., New Holland, Ga.
Peacedale Manufacturing Co., Peacedale, R. I.
Pearl Cotton Mills, Durham, N. C.
Pee Dee Manufacturing Co., Rockingham, N. C.
Pell City Manufacturing Co., Pell City, Ala.
Pelzer Manufacturing Co., Pelzer, S. C.
Penn-Mary Steel Co., Newark, N. J.
Pennsylvania Cement Co., Bath, Pa.
Pennsylvania R. R. Co., Philadelphia, Pa.
Pennsylvania Salt Manufacturing Co., Natrona, Pa.
Perfection Tire & Rubber Co., Fort Madison, Iowa.
Perth-Amboy Dry Dock Co., Perth Amboy, N. J.
Phelps, Dodge Corporation, Tyrone, N. Mex.
Phoenix Refining Co., Tulsa, Okla.
Pickands, Mather & Co., Cleveland, Ohio.
Pittsburgh Crucible Steel Co. *See* Midland Improvement Co., Midland, Pa.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Pittsburgh Reduction Co., Massena, N. Y.
Plymouth Cordage Co., Plymouth, Mass.
Plymouth Rubber Co., Canton, Mass.
Pocasset Worsted Co., Providence, R. I.
Porter Fuel Co., Porter, Ohio.
Porterdale Mills. *See* Bibb Manufacturing Co., Porterdale, Ga.
Postum Cereal Co., Battle Creek, Mich.
Prendergast (W. H.), Bridgeton, R. I.
Princess Furnace Co., Glen Wilton, Va.

POCASSET WORSTED Co., Thornton, R. I.
PROCTOR ELLISON Co., Elkland, Pa.
PROXIMITY MANUFACTURING Co., Greensboro, N. C.
PUGET SOUND TRACTION, LIGHT & POWER Co., Seattle, Wash.
PULLMAN Co., Richmond, Calif.; Pullman, Ill.
PURITAN WOOLEN MILLS, Plymouth, Mass.
RALSTON STEEL CAR Co., Columbus, Ohio.
RED RIVER LUMBER Co., Westwood, Calif.
REGAL SHOE Co., Boston, Mass.
REMINGTON ARMS-UNION METALLIC CARTRIDGE Co., Bridgeport, Conn.
REPUBLIC COTTON MILLS, Great Falls, S. C.
REPUBLIC MOTOR TRUCK Co., Alma, Mich.
REPUBLIC RUBBER Co., Youngstown, Ohio.
RICHMOND LACE WORKS, Alton, R. I.
RIVERSIDE & DAN RIVER COTTON MILLS, Schoolfield, Va.
RIVERSIDE MANUFACTURING Co., Anderson, S. C.
ROBERDELL MANUFACTURING Co., Rockingham, N. C.
RODMAN MANUFACTURING Co., Lafayette, R. I.; Shady Lea, R. I.
ROEBLING'S (J. A.) SONS Co., Roebling, N. J.
ROGERS WIRE WORKS, Belleville, N. J.
ROME BRASS & COPPER Co., Rome, N. Y.
ROOT & VANDERWOORT ENGINEERING Co., East Moline, Ill.
ROSLYN FUEL Co., Beekman, Wash.
ROSS-MEEHAN FOUNDRY Co., Chattanooga, Tenn.
ROYAL MILL, Riverport, R. I.
THE ROYCROFTERS, East Aurora, N. Y.
RUMFORD CHEMICAL WORKS, Rumford, R. I.
SACO-LOWELL SHOPS, Boston, Mass.
ST. LAWRENCE PYRITES Co., De Kalb Junction, N. Y.
ST. LOUIS SMELTING & REFINING Co., St. Louis, Mo.
SAMOSET WORSTED Co., Woonsocket, R. I.
SAUCON LAND & IMPROVEMENT Co., Bethlehem, Pa.
Subsidiary land company of Bethlehem Steel Corporation.
SAVANNAH & ATLANTA R. R., Port Wentworth, Ga.
SAYLES BLEACHERIES, Saylesville, R. I.
SAYRE & FISHER Co., Sayreville, N. J.
SCHUTTE & KOERTING Co., Philadelphia, Pa.
SCHWARZENBACH HUBER Co., West Hoboken, N. J.
SCOVILLE MANUFACTURING Co., Waterbury, Conn.
SELBY SHOE Co., Portsmouth, Ohio.
SEMINOLE MANUFACTURING Co., Clearwater, S. C.
SEXTON MANUFACTURING Co., Fairfield, Ill.
SHEET & TUBE Co. OF AMERICA, Indiana Harbor, Ind.
SHENANGO FURNACE Co., Duluth, Minn.
SHERMAN MANUFACTURING Co., Sherman, Tex.
SIBLEY MANUFACTURING Co., Augusta, Ga.
SIMONDS MANUFACTURING Co., Fitchburg, Mass.
SINCLAIR REFINING Co., Chicago, Ill.
SLATERSVILLE FINISHING Co., Slatersville, R. I.
SLOSS-SHEFFIELD STEEL & IRON Co., Birmingham, Ala.
SMUGGLES LEASING Co., Aspen, Colo.
SNOQUALMIE FALLS LUMBER Co., Snoqualmie Falls, Wash.
SOLVAY PROCESS Co., Syracuse, N. Y.
SOUTH PENN. OIL Co., Pittsburgh, Pa.

SOUTHERN ALUMINUM Co., Badin, N. C.
SPARTAN MILLS, Spartanburg, S. C.
SPENCER WIRE Co., Spencer, Mass.
SPRAY COTTON MILLS, Spray, N. C.
SPROUT, WALDRON & Co., Muncy, Pa.
STAMFORD ROLLING MILLS, Springdale, Mass.
STANDARD BLEACHERY Co., Carleton Hill, N. J.
STANDARD SILK Co., Phillipsburg, N. J.
STANDARD STEEL CAR Co., Hammond, Ind.; Butler, Pa.; Lyndora, Pa.
See LYNDORA LAND & IMPROVEMENT Co., Lyndora, Pa.
STEELE MILLS, Rockingham, N. C.
STEINWAY & SONS, New York City.
STERLING IRON & RY. Co., Sterlington, N. Y.
STETSON (JOHN B.) Co., Philadelphia, Pa.
STILLWATER WORSTED Co., Harrisville, R. I.
STRATHMORE PAPER Co., Mittineague, Mass.
SWIFT'S MILLS, Elberton, Ga.
TAGGART'S PAPER Co., Watertown, N. Y.
TALBOT MILLS, North Billerica, Mass.
TAYLOR INSTRUMENT COMPANIES, Rochester, N. Y.
TIDE-WATER PIPE LINE Co. (LTD.), Titusville, Pa.
TIMKEN-DETROIT AXLE Co., Detroit, Mich.
TOXAWAY MILLS, Anderson, S. C.
TRAYLOR SHIPBUILDING CORPORATION, Cornwall, Pa.
TRUMBULL-VANDERPOEL ELECTRICAL MFG. Co., Bantam, Conn.
UNION FABRIC Co., Derby, Conn.
UNION METALLIC CARTRIDGE Co. *See* REMINGTON ARMS-UNION METALLIC CARTRIDGE Co., Bridgeport, Conn.
UNION POWDER Co. *See* HERCULES POWDER Co., Wilmington, Del.
UNION STONE Co., Brokaw, Ohio.
UNION STREET RY. Co., New Bedford, Mass.
UNITED CIGARETTE MACHINE Co., Lynchburg, Va.
UNITED ENGINEERING & FOUNDRY Co., Pittsburgh, Pa.; Vandergrift, Pa.
UNITED SHOE MACHINERY Co., Beverly, Mass.
UNITED STATES METALS REFINING Co., New York City.
U. S. PORTLAND CEMENT Co., Concrete, Colo.
U. S. STEEL CORPORATION. *See* AMERICAN IMPROVEMENT Co., CARNEGIE LAND Co., GARY LAND Co., MORGAN PARK Co., VANDERGRIFT LAND & IMPROVEMENT Co.
UNIVERSAL PORTLAND CEMENT Co. *See* GARY LAND Co., Gary, Ind.; MORGAN PARK Co., Duluth, Minn.
VALLEY FALLS Co., Albion, R. I.
VALLEY MOULD & IRON Co., Sharpsville, Pa.
VALLEY QUEEN MILL, Riverpoint, R. I.
VAN BRUNT MANUFACTURING Co., Horicon, Wis.
VANDERGRIFT LAND & IMPROVEMENT Co., Vandergrift, Pa.
Subsidiary housing company of the American Sheet & Tin Plate Co., for plants at Vandergrift, Pa. The latter company is a subsidiary of the U. S. Steel Corporation.
VAN WICKLE (E. S., ESTATE OF), Hazelton, Pa.
VICTOR MANUFACTURING Co., Greers, S. C.
VICTORIA MILLS, Thornton, R. I.,
VISCOSE Co., Marcus Hook, Pa.
WALKER LUMBER Co., Westwood, Calif.
WALTHAM WATCH Co., *See* AMERICAN WALTHAM WATCH Co., Waltham, Mass.

WANSKUCK Co., Nasonville, R. I.
WARE SHOALS MANUFACTURING Co., Ware Shoals, S. C.
WARREN AXE & TOOL Co., Warren, Pa.
WARREN MANUFACTURING Co., Warren, R. I.
WARREN (S. D.) & Co., Cumberland Mills, Me.
WARRIOR-PRATT Co., Porter, Ala.
WARWICK MILLS, Centerville, R. I.
WATERBURY TOOL Co., Waterbury, Conn.
WAYNE KNITTING MILLS, Fort Wayne, Ind.
WENTZ (J. S.) & Co., Hazelton, Pa.
WEST BOYLSTON MANUFACTURING Co., East Hampton, Mass
WESTINGHOUSE AIRBRAKE Co., Wilmerding, Pa.
WESTSIDE LUMBER Co., Torrance, Calif.
WHEELWRIGHT (GEO. W.) PAPER Co., Hardwick, Mass.
WHITE (E. E.) COAL Co., Glen White, W. Va.
WHITE ROCK MILLS, White Rock, R. I.
WHITIN MACHINE WORKS, Whitinsville, Mass.
WIERTIN TIN-PLATE Co., Wiertin, W. Va.
WILLIMANTIC LINEN Co., Willimantic, Conn.
WILLIMANTIC THREAD Co., Willimantic, Conn.
WINCHESTER REPEATING ARMS Co., New Haven, Conn.
WINDHAM MANUFACTURING Co., Quidnick, R. I.
WINSLOW BROTHERS & SMITH Co., Norwood, Mass.
WISCASSETT MILLS Co., Albemarle, N. C.
WISCONSIN STEEL Co., Benham, Ky.
WOCO BRAID Co., Black Rock, R. I.
WOLF RIVER PAPER & FIBRE Co., Shawano, Wis.
WOLF RUN MANUFACTURING Co., Wolf Run, Ohio.
WOOD (R. D.) Co., Millville, N. J.
WOODLAWN LAND Co., Woodlawn, Pa.
Subsidiary housing company of the Jones & Laughlin Steel Co., Pittsburgh, Pa.
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WORONOCO PAPER Co., Russell, Mass.
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YOUNGSTOWN SHEET & TUBE Co. *See* BUCKEYE LAND Co. Youngstown, Ohio.

SERIES OF BULLETINS PUBLISHED BY THE BUREAU OF LABOR STATISTICS.

[The publication of the annual and special reports and of the bimonthly bulletin was discontinued in July, 1912, and since that time a bulletin has been published at irregular intervals. Each number contains matter devoted to one of a series of general subjects. These bulletins are numbered consecutively beginning with No. 101, and up to No. 236 they also carry consecutive numbers under each series. Beginning with No. 237 the serial numbering has been discontinued. A list of the series is given below. Under each is grouped all the bulletins which contain material relating to the subject matter of that series. A list of the reports and bulletins of the bureau issued prior to July 1, 1912, will be furnished on application.]

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